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AN EXAMINATION
OF THE
PRACTICE OF BLOODLETTING
IN
MENTAL DISORDERS,

BY PLINY EARLE, M. D.,

AUTHOR OF "A VISIT TO THIRTEEN ASYLUMS FOR THE INSANE IN EUROPE;"
"HISTORY, DESCRIPTION AND STATISTICS OF THE BLOOMINGDALE ASYLUM
FOR THE INSANE;" AND "INSTITUTIONS FOR THE INSANE IN
PRUSSIA, AUSTRIA, AND GERMANY."

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TO THE READER.

Believing that this essay bears within itself abundant evidence of the necessity of *some* work of its kind, I shall offer no apology for presenting it to my fellow members of the medical profession. In extenuation of some of its many imperfections, it may be mentioned that the manuscript was forwarded to the printer in parts, as rapidly as it was prepared. The first pages had passed through the press even before the extracts from many of the authors had been collected.

It was not without difficulty, and many misgivings, that the attempt to arrange the opinions of the various writers quoted into two very distinct, and, to some extent, antagonistic classes, was carried into execution. Those opinions are so diverse, that they form an almost regular gradation from the entire disuse of the lancet to its nearly constant, unexceptional use. It is possible that some have been placed upon the wrong side of the broad line of demarcation which has been assumed. The authorities appearing the most nearly to approximate an exact medium between the two extremes, are Dr. Bryan, § 51, of the first series, and Drs. Prichard, § 123, and Combe, § 126, of the second. Yet, if their language be considered in connection with a proper understanding and appreciation of the nature of the disease in question, it is believed that the position assigned to each, is that to which he is most justly entitled.

The assertion by many of the authors in the first series, that bleeding is indicated if there be inflammation, was not deemed as any evidence that it is *frequently* indicated. But few truths in pathology are better established than that active sthenic inflammation is of very rare occurrence in those forms of disease ordinarily included under the general term "Insanity."

New York, April 15th, 1854.

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ERRATA.

Page 12, 2d line from the bottom, for "*efforts*," read "*effects*."

" 14, 15th line from the bottom, insert "*as*" after "*bad*."

" 50, 2d line from the top, for "*emotion of*," read "*emotional*."

" 57, 18th line from the top, insert "*is*" after "*object*."

" 64, 5th line from the bottom, for "*A*," read "*I*."

" 70, 8th line from the bottom, for "*this, the moment*," read "*this
is the moment*."

" 74, 22d line from the top, for "*racotte*," read "*raccolte*."

" 84, 9th line from the bottom, insert a dash after "*shaved*."

" 110, 15th line from the bottom, for "*analysis*," read "*analyses*."

Quotation marks should be *inserted* at the commencement of § § 34, 79 and 82, and on page 57, at the beginning of the 11th line from the top. The quotation marks should be *omitted* at the commencement of § 115, and those after "*permitted*," page 91, 16th line from the top, should be placed after "*arguments*" in the preceding line.

BLOODLETTING

IN

MENTAL DISORDERS.

BY PLINY EARLE, M. D.

PROPOSITION.—TO WHAT EXTENT, IN REGARD TO BOTH FREQUENCY AND QUANTITY, IS THE ABSTRACTION OF BLOOD REQUIRED, IN THE TREATMENT OF INSANITY?

§ 1. “To *bleed*, or not to *bleed*: that’s the question.” I approach it with the desire, as well as the intention, of discussing it fairly, honestly, dispassionately, impartially—briefly as circumstances permit in the expression of my own views, relying chiefly upon the facts and opinions promulgated by others, and with no other object than the attainment, if possible, of truth.

In the consideration of the subject we are met, at the outset, with the following certainly very remarkable facts.

First. Dr. Rush, in his well known “Medical Enquiries and Observations,”—a treatise which has had a circulation, among American physicians, more extensive than that of the works of all other Authors upon mental disorders, recommends venesection in each of the four generally recognized forms of insanity, Mania, Monomania, (Amenomania,) Melancholia, (Tristimania) and Dementia, (Demence, or Dissociation.) Abstracting from these classes a relatively small proportion of patients, he establishes for them four new divisions, Derangement of

the Will, Derangement of Memory, Derangement of Faith, and Fatuity, which, with some exceptions in regard to the last, are not recognised as distinct forms by other authors. In the first two of these he advises venesection, but not in the last two.

Second. In the Annual Report of Dr. Benedict, Superintendent of the New York State Lunatic Asylum, at Utica, it is asserted that "not one ounce of blood has been drawn from the eight hundred and twenty-five patients under treatment during the past year."

It may also be stated, upon oral authority, that in two of the other largest American institutions for the insane, no depletion, by either general or local bleeding, has been practised in the course of the year 1853, although during that period, upwards of eighteen hundred patients were under care.

The doctrines of Dr. Rush, and the prevalent practice at our largest establishments for the insane as they are here represented, how much soever the two should be qualified, or explained, in order to bring them to a parallel proper for exact comparison, present a palpable, broad, and, to an impartial unprofessional reader, glaring and unaccountable contrast. Black and white are scarcely more dissimilar. Light and darkness hardly present a greater difference. Antipodes are but little, if any, more diametrically opposite. The zenith and the nadir are but one remove more remote each from the other.

Where, then, is the truth? Where that accurate grade, or position, which, as it will the most essentially promote the welfare of the patient, is desired by every conscientious physician? Is it at either extreme, or at some undefined point between the two? These are questions of no minor importance. In the opinion of many practitioners, life or death, restoration to mental integrity, or

permanent insanity, depend upon their solution, and the practice resulting therefrom.

Omitting, for the present, any discussion of the subject based upon physiological facts or pathological facts and theories, I proceed to the quotation of such authorities as advocate a parsimonious use of the lancet and, though less so, of the means of topical bleeding. The first series of extracts is from American writers :

§ 2. "I trust that I may be allowed, without offence, to call the attention of my professional brethren who are so partial to the depletory treatment advocated by Rush and certain English writers, to the important fact that, in no hospital for the insane in New England—and the same may be the case in many other institutions in our country—is this treatment now used. I can not but think that, if this fact were generally known, it would lead them to a thorough revision of the grounds of their treatment, or, at least, would render them more cautious how they practice those enormous abstractions of blood which so often lay the foundation of hopeless fatuity, or a tedious convalescence.—*Dr. I. Ray, p. 25 of the Third Annual Report of the Maine Insane Hospital.*

"General bleeding, which was once considered as indispensable in acute mania, was utterly discarded, forty years ago, by Pinel, is practiced with increasing caution and distrust by the English, and is now seldom used in any American hospital."—*Ibid pp. 5–8 of the Fifth Annual Report of the Maine Insane Hospital.*"

§3. "Many physicians, I am confident, take it for granted that inflammation is necessarily present, in all cases of acute mania, and the lancet follows the opinion promptly, perhaps repeatedly. It is not insisted that general bleeding is *never* necessary, but I do believe very few cases require it, and thus more injury is done, in most

cases, to the powers of the brain, than by any other active remedy usually resorted to. Temporary or permanent dementia often follows this depletion. As arterial action is always unequal, local, instead of general blood-letting would be as efficient if not more so, and, in my opinion, more safe.”—*Dr. James Bates, Superintendent of the Maine Insane Hospital, p. 40 of Report for 1846.*

§ 4. “I believe that purging, bleeding, low diet, &c., have been adopted with little discrimination. They are to be resorted to only when there is organic disease which requires the reducing plan. But these remedies, especially in debilitated subjects, are seldom useful in relieving mental diseases. They are usually injurious and frequently fatal.”—*Dr. Rufus Wyman, of Mc Lean Asylum; in a note to a discourse upon ‘Mental Philosophy as connected with Mental Disease,’ delivered before the Massachusetts Medical Society.*

§ 5. “Each year that I have passed in this extensive field, has served to diminish my confidence in an active medical treatment of almost every form of disease of the mind, and to increase my reliance upon moral means. No individual at the head of an insane institution would now think of combating any form of insanity with the depletory and reducing means once regarded as indispensable. The practice of bleedings, violent purgatives, emetics, vesicatives and derivatives, has passed away before the light of experience.”—*Dr. L. V. Bell, Report of McLean Asylum, for 1841. p. 22.*

§ 6. “All agree that depletion, by which I would be understood general bleeding and active cathartics, is not favorable in insanity, as it rarely affords more than temporary relief, and frequently produces injurious efforts. When bloodletting has been employed freely and frequently in active mania, the only form of insanity

in which it is commonly used to excess, if the excitement for a short period, an hour or two and sometimes a day or two, abates, it is generally renewed with increased violence and under circumstances far less favorable for the benefit of other remedies. The indications for active depletion are usually the effect and not the cause of excitement; they grew out of the perpetual activity of the physical and mental powers, and are not the cause of it. By this course of remedies the strength and energy of the system is reduced, the nervous system is rendered more susceptible, and the actual violence of the symptoms is increased. The effect of great loss of blood is often to produce pain in the head, a sense of stricture as if a fillet were tied around it tightly, ringing in the ears and noises in the head, which lead to false perceptions of sound, and illusions liable to result in permanent insanity. It is said that animals bled to death have congestion of blood in the vessels of the head. The last rush of blood seems to be to this citadel of life. It is a fact, also, that I have noticed for many years, that affections of the heart are produced by excessive loss of blood in any way. An eminent practitioner of medicine once informed me that when he had bled cases of severe and painful neuralgia, he had repeatedly found palsy of the side affected with the disease on his next visit.

“Free general bleeding is only useful in cases of entonic inflammation, such as pneumonia and phrenitis, with symptoms very unlike those attendant on insanity in any form.

“The effect of local bleeding is more favorable, and may sometimes procure relief from distressing symptoms and afford an abatement of excitement that may give other remedies a better opportunity to produce good

effects. But even local bleeding can rarely be relied upon to cure insanity. It is usually prescribed to procure present relief, rather than with the expectation of permanent benefit. Where there is a redness of the eyes, great headache, much heat, and throbbing of the carotid and temporal arteries, it may not be amiss to use local depletion, while, at the same time, every effort should be made to promote the circulation of blood in the extremities, and the quantity abstracted at one time should not be very great.

§ 7. "In some cases I have seen great excitement followed by a state of apparent dementia, almost immediately on free bloodletting. Some time ago, a female, aged about fifty, came under my care in the most violent mania. The remedies prescribed for her had but little effect, and it was resolved to bleed her freely. Sixteen or eighteen ounces of blood were taken from her arm. She became dull almost immediately, and remained so for a long time before she gained activity of mind, after which her excitement became as bad ever, and other remedies finally relieved her.

"A vigorous, athletic man, aged fifty-five, was subject to the most violent paroxysms of periodical insanity. He had been under my care repeatedly, and remedies had but little effect in diminishing his excitement or abridging the length of his paroxysms. One day in the extreme of one of his excitements, he urged me to bleed him, and presented his arm for the purpose, held by the other hand so as to swell the veins to an inordinate size. I had him bled freely, principally to see what would be the effect of copious depletion in such a state of excitement. Within a few hours he seemed like an idiot, but the excitement was not essentially diminished. His mind was entirely chaotic for a number of days, the paroxysm was

prolonged to an unusual extent, and its violence, on the whole, was not lessened.

"Some years ago, a shipmaster came under my care who had been bled about sixteen ounces, from twenty to thirty times, in the course of five or six weeks. He looked pale and bloodless, was tremulous and weak, but his excitement was not essentially abated. He afterwards recovered under different treatment, and has had no return of the disease.

"A patient is now under my care who was bled in the outset of his disease, four or five pounds, at as many different times. His body appeared bloodless, and his mind chaotic in the extreme. He has become more quiet, but all our efforts have failed of removing his insanity."

—*Dr. Samuel B. Woodward, page 71 of the Twelfth Annual Report of the State Lunatic Hospital at Worcester, Mass.*

§ 8. Dr. Todd, who directed the Hartford Retreat, in its earlier years, with distinguished success, has left no written opinion in regard to the treatment of insanity. Dr. Brigham, however, in the fourth volume of the *American Journal of Insanity*, says of him :

"He early discountenanced depletion, particularly bleeding, in insanity, and insisted upon the necessity of generous diet, and recommended a frequent resort to tonics and narcotics in the medical treatment of the insane. This course of treatment, though it had been recommended by the best writers on insanity in Europe, had not, to much extent, been resorted to in this country previous to the time of Dr. Todd, and it was so contrary to that recommended by Dr. Rush, that it required considerable boldness, and much address and management, to introduce it, and make it popular in this country—and this Dr. Todd accomplished."

§ 9 "Regard should be had to the cause of the insan-

ity. If occasioned by a blow, or other direct physical injury of the head, or from some sudden and violent mental emotion, while in good health, free depletion by bleeding and active cathartics are useful and often indispensable. But such cases are seldom seen in lunatic hospitals. We have very rarely considered it advisable to have recourse to general bleeding at this institution. Occasionally, when there is much cerebral excitement, we have resorted to topical bleeding, but more frequently, even in such cases, we derive benefit from placing the feet in warm water, the application of cold to the head, and the free movement of the bowels by laxatives."—*Dr. A. Brigham, page 32 of the Eighteenth Annual Report of the Retreat for the Insane, at Hartford.*

"Some cases may, perhaps, require bleeding, but we apprehend such instances are rather rare. Many of our patients appear to have been injured by too much bleeding and depletion before admission to the Asylum."—*Ibid. Page 60 of the Report for 1843 of the N. Y. State Asylum.*

"Only four of the six hundred and twenty-two patients that have been here during the past year, have been bled by us. In three of these cases the bleeding did not appear to be serviceable; in one we thought it highly beneficial."—*Ibid. Page 353 of the American Journal of Insanity, April, 1847.*

"The treatment of insanity by bleeding, though strongly recommended by Dr. Rush and some others, we believe to be generally improper, and frequently very injurious. Sometimes it appears to produce a fatal result, and we are confident that it not unfrequently renders cases incurable. Some physicians appear to consider great maniacal excitement, vociferation, and violence as sufficient evidence of inflammation to have recourse to general bleeding; but as we have said, this is usually a sad mis-

take. So frequently have we seen bad results from bleeding copiously in the commencement of insanity, that we are strongly inclined to limit the resort to it to those cases that occur suddenly in robust persons, with a hard or a full, strong pulse, redness of the eyes and face, and other well-marked symptoms of inflammation of the brain or its membranes. *No regard whatever should be paid to the mere excitement and violence of the patient, as furnishing indications for bleeding.*

“That bleeding is sometimes serviceable and necessary at the commencement of insanity, we do not doubt; but of this we are confident, if a patient actually requires bleeding in consequence of the inflammation of the brain or its membranes, then he requires to be kept still, and will be greatly injured by travelling.” *Ibid. Page 28 of the Fifth Annual Report for the New York State Lunatic Asylum.*

§ 10. “Of acute mania, we had thirty-eight cases at the commencement of the year, and have admitted one hundred and sixteen during the year. Many came to us in a perfect fury of excitement, raving, struggling and resisting, exhausted by the journey, and having taken no food or sleep for days.”

“In no cases have we found local or general bleedings admissible, but, on the contrary, nutritious diet and brandy punch are generally demanded. We give from half a pint to twelve ounces of brandy a day, and continue it for weeks, as we do in mania-a-potu, the diseases resembling each other in many of their symptoms and post mortem appearances, and admitting of, if not demanding similar treatment.”—*Dr. N. D. Benedict, pp. 22, 23, of Eighth Annual Report of the New York State Lunatic Asylum.*

“We cannot urge our medical brethren too strongly to

abstain from the practice of taking blood from insane persons. Our plan of treating very active insanity is directly opposed to depletion. Not one ounce of blood has been drawn from the eight hundred and twenty-five patients under treatment during the past year. We resort to stimulation, in many cases, with great freedom, and have seen the best evidences of its propriety." *Ibid.* Page 16 of the *Tenth Annual Report*.

§ 11. "With great deference I have here ventured to reverse the order of Dr. Rush, who says "the cause of madness is seated primarily in the bloodvessels of the brain." This theory, I apprehend has too often, in incipient insanity, led young practitioners into the fatal error of treating, by bold depletion, irritation for inflammation, than which, as a general rule, nothing is more prejudicial to the radical cure of the patient."—*Dr. Samuel White proprietor of the Hudson Lunatic Asylum, Page 5 of an 'Address on Insanity, before the New York State Medical Society.'*

"Copious abstractions of blood should ever be avoided in insanity, as endangering dementia. Very few are the cases of insanity, even in its incipient stage, that admit of venesection. In such only as are plethoric, and in the vigor of life, is it admissible at all, and then only in a cautious degree. The pulse is deceptive, for though there may be increased impetus of blood in the carotids, yet they will be found compressible, and the radial artery feeble in its action, showing an unequal distribution rather than congestion. In such cases, where symptoms seem urgent, topical blood-letting, by leeching or cupping, may safely be resorted to without danger of collapse. In the treatment of six hundred cases, venesection has not been resorted to in more than one in a hundred, after they entered the institution, and then only

moderate in quantity. Many, however, have been brought to the asylum, after two or three copious bleedings, undoubtedly with the best intentions; yet the results have proved a prostration of the vital energies, more difficult to overcome than the original disease." *Ibid. Page 13 of the same Address.*

§ 12. The opinion of the late Dr. James Macdonald, of New-York, than whom no American is or has been more sagacious in the perception of the true nature of insanity, in special cases, nor more skilfull in its management, may be inferred from some of the records which he has left upon the medical annals of the Bloomingdale Asylum for the Insane.

In the entry of the case of Mr. K. in the Case Book, in August 1826, it is recorded that he "was depleted down to a state of idiotism." In the Physicians report to the Committee of Governors, at their meeting, on the 2d of September next following, the same case is mentioned, among the patients admitted, as follows. "M. K. with Dementia: a striking example of the indiscriminate and excessive employment of the lancet in mental diseases.— In this case, which was one of low, brooding melancholy, the most active bloodletting was employed, and repeated, day after day, until his physical energies were so far prostrated as to incapacitate the brain from performing functions common to brutes, and the heart almost from circulating the blood." This patient remained at the Asylum two months, and was discharged "by request," the expression used at that institution as a substitute for *unimproved*.

In April, of the same year, a woman was admitted who "had been bled to the amount of eighty or ninety ounces, which had only the effect of weakening her mind without in the least allaying the violence of the parox-

ysms, or lessening morbid strength." She remained six months and was discharged "much improved," but in January, 1834, she was readmitted, and became a permanent resident of the institution until the time of her decease, from cancer of the breast, in 1849.

In February, 1829, A. C. F. was admitted. He had been "bled from twelve to sixteen ounces, every third or fourth day, for the space of six months." After being subjected to treatment for two years, he was discharged "by request." Two months afterwards, he was brought back and remained until his decease, from typhoid-fever, in 1848.

In August, 1828, J. W. J. was admitted. He had been "bled at different times to the amount of three or four quarts." He was discharged "cured," five weeks after his reception, but was re-admitted after an absence of seven months. He was now incurable, and remained in the Asylum until his death, nine and a half years subsequent to his last admission.

December, 1828, admitted H. J. who had been treated by "copious bleeding and other depletion." Discharged one month afterwards, "demented."

December, 1832, E. J. who had been "bled copiously from both arms," died twelve days after admission.

March, 1833, E. S. C. had been treated by "copious bleeding, blistering," &c. She remained five months and was discharged "by request."

September, 1835, J. U. She had been "repeatedly bled and exceedingly reduced." Remained six months and discharged "demented."

July, 1837, C. R. "had lost sixty-four ounces of blood in a few days before her admission." After a residence of two years, she was transferred to the Alms-House, "demented."

The list of cases similar to the above might be enlarged, if necessary. To demonstrate that I have no desire to support this side of the question upon one-sided or *ex parte* evidence, it may be remarked that, throughout a period of twenty years anterior to 1844, of all the cases in which general depletion by the lancet is recorded upon the case-books of the Asylum, as having been practised prior to the admission of the patient, only *five*—with the exception of J. W. J. abovementioned, who soon returned incurable—were discharged “cured.” As the records, however, are often imperfect, such cases are not numerous.

§ 13. In the extract subjoined, we have the opinion of Dr. Macdonald, as expressed in his excellent Monograph upon Puerperal Insanity.

“*As in other varieties of insanity, venesection or general blood-letting, is, in my experience, seldom necessary, particularly in public institutions, where patients are not often sent until the more acute stage of the disease has passed by. Of the sixty-six cases which have fallen under my observation, there were only six in which venesection was used, and in all of these instances except one, blood was taken before the patient came under my care. It is true respecting this, as it is of every other remedy, that there is no specific, and that there must be some good reason besides the mere existence of puerperal insanity, for its employment,—there must exist great vascular excitement, or congestion of the brain, or some urgent symptom. In one of the cases in which the patient was bled, insanity came on about the middle period of pregnancy, and was accompanied by cephalalgia, noise in the ears, and other symptoms of cerebral congestion. In another, the patient was placed under treatment within five days after partuition, had suffered with*

cerebral disturbance long prior to this period, and had not had a natural night's rest in three months. In another case, the patient was plethoric, under great vascular excitement, and her treatment was commenced immediately after the occurrence of insanity, which was two days after labor. In a fourth case, the patient was not benefited by the practice: in a fifth case, the patient died in about a fortnight after her first attack, and was probably injured by the treatment; and in the sixth case, blood was taken from the arm a few days before, and a few days after delivery—in the first instance with relief, but in the latter with an aggravation of symptoms.”

§ 14. “The symptoms in the early stages of puerperal mania are sometimes so deceptive and so simulate those of phrenitis, that practitioners are led to draw blood in large quantities. That venesection is occasionally useful, there can be no doubt. I can imagine it so even in some cases of delirium tremens, because the most judicious practitioners have found it of advantage—but in the great majority of cases of puerperal mania, it will only tend to increase the delirium and endanger life. Muttering or violent delirium, heat and tossing about of the head, contraction of the pupils, a frequent pulse, constant jactitation of the body, with movements of the limbs and a dry tongue, constitute a group of symptoms indicative of what is called, in the books, inflammation of the brain—but a species of inflammation, if inflammation it be, which may be better treated by anodynes and stimulants than by blood-letting. Abercrombie mentions a variety of inflammation of the brain, in which venesection is fatal and wine useful. Some forms of puerperal mania resemble it.

“Finally, we should bleed, not because there is a frequent pulse and violent delirium, but because there exists some good reason for so doing, as, for example, when the

patient is naturally vigorous and plethoric—has been suddenly seized, has a hard, full pulse, great heat, and has suffered cerebral congestion, prior to the development of insanity.

“Local bleeding, by cupping and leeching, is more frequently admissible than general bloodletting. Seven of the sixty-six patients that have been under my care were cupped, and four leeches. The cupping is chiefly employed to relieve congestion of the brain—the glasses being applied to the temples, and the occiput. Cupping is also performed over the sacrum, and leeches applied to the vulva and thighs, to irritate and invite the flow of the menses.

“When bloodletting is required, cupping and leeching answer the purpose in almost every case, but even these have been seldom called for in the cases which I have had to treat. Both Esquirol and Gooch consider local safer than general bleeding. Burrows inclines to the same opinion.”—*Essay on Puerperal Insanity, American Journal of Insanity, Vol. IV, pages 153 and 154.*

§ 15. “The various forms of topical depletion, with other means strictly medical, may all be occasionally required. General depletion too, may be necessary in the commencement of a case—but it has generally been amply employed before the patient reaches a hospital, and is rarely indicated afterwards. Medical men would do well to prevent the prejudices of friends from leading them to pursue a course of treatment proper for inflammation of the brain, but which, if long persisted in, in cases of insanity, can hardly fail to produce serious and often irreparable mischief.”—*Dr. T. S. Kirkbride, Page 31 of the Report of the Pennsylvania Hospital for the Insane, for the year 1842.*

§ 16. “I feel that I am discharging a part of my duty

towards the insane in calling attention to an error which is very extensively prevalent, and which consists in the almost invariable resort to blood-letting in all cases of insanity. All hospital experience, not only in this country but also in Europe, has proved that the loss of blood in any form of insanity, is almost uniformly attended with unpleasant effects, prolonging the period of cure, and in many cases placing the patient hopelessly beyond the reach of any benefit to be derived from subsequent treatment. Insanity is essentially a nervous disorder, and must be treated as such; and the greatest care should be taken to distinguish between that excitement which is purely nervous, and the delirium caused by inflammatory action. Where any doubt exists, the abstraction of a few ounces of blood by cups or leeches, watching the effect, will enable the physician to judge of the propriety of the course he is pursuing."—*Dr. John Curwen; page 18 of the Annual Report of the Pennsylvania State Lunatic Hospital, for the year 1852.*

§ 17. "There is one evil of so frequent occurrence, and so mischievous in its character, that we cannot, even at the risk of being deemed presumptuous, refrain longer from raising our voice against it, and calling upon physicians, throughout the commonwealth, to halt in a course which but too often aggravates, and that in a ten-fold degree, the horrors of a malady for the relief of which their interposition has been sought. It rarely happens that a patient is brought here, after having previously been under the care of a medical practitioner, in regard to whom it cannot be said that he has been '*well bled, blistered and purged.*' So indiscriminate and universal is this practice, and to such an extent is it frequently prosecuted, that it numbers amongst its *victims* those laboring under every form, degree, and duration of insanity. But those who

are most exposed to it, and in the greatest degree injured by it, are individuals afflicted with active mania. Here the practitioner rarely fails to attribute the usual consequences which result from *nervous* excitement, to inordinate *arterial* action. The incessant ravings, extreme restlessness, flushed countenance, heat of skin, excited pulse, distended blood-vessels, and almost supernatural muscular power, which in such cases are but *effects*, are, unfortunately, for want of proper discrimination, viewed as *symptoms* of the disease, and the unhappy patient is forthwith subjected to a course of *active depletion*, with *blisters*, designed to act as revulsives, which invariably increase the evils they were intended to relieve. I would by no means assert that cases never occur in which a free use of the lancet, and other depletory measures, are not absolutely required, for the reverse is the fact; but such cases are, beyond question, comparatively rare, whilst the practice complained of is, as before remarked, almost universal.”—*Dr. Francis T. Stribling. Pages 31-32 of the Annual Report of the Western Lunatic Asylum, Virginia, for 1842.*

§ 18. “The asthenic character of disease, now becoming so marked in the great Western Valley, has been singularly prominent in the cases received last year. In no one was the idea of depletion entertained for an instant, by any of the medical officers of the institution; and those who had lost blood previously to their admission, proved exceedingly difficult to restore, sank into hopeless dementia, or died. It must now be considered a settled thing, that during the continuance of the present asthenic epidemic constitution, depletion is exceedingly hazardous, and commonly contra-indicated in insanity; and in the very same forms of disease in which blood-letting was formerly so freely practised, the liberal use

of stimulants is now required, tolerated, and proves eminently curative.”—*Dr. S. Hanbury Smith, p. 32 of Thirteenth Annual Report of the Ohio Lunatic Asylum.*

§ 19. Bleeding quiets the patients temporarily, but the excitement returns with greater fury, and the system is less able to bear it than before. So far as I have observed the practice, bleeding does not accomplish the desired object, but the contrary; for it impoverishes the blood, reduces the strength of the patient, and thereby renders the nervous system more exciteable.**** Raving mania can be much more permanently controlled by the use of the warm bath, cold applications to the head, warm footbaths, mild cathartics, and in some cases, by nauseants.”—*Dr. R. J. Patterson, page 18 of the Annual Report of the Indiana Hospital for the Insane, for 1849.*

Before his appointment to the Indiana Hospital, Dr. P. had for several years been connected, as Assistant Physician, with the Ohio State Asylum, one of the largest institutions of the kind in the United States.

§ 20. “Venesection is very rarely resorted to (by American physicians to the insane) and I am sure never to quiet the ravings of the maniac, to tranquilize the agitation of the less furious, or to bring sleep to the wakeful lunatic. Fatal, indeed, it seems to me, to the intellect if not to the body of the patient, if the mental excitement, the general indications of nervous disorder, were to be regarded as so many demands for depletory measures. I would particularly insist that no practitioner suffer himself to be misled by the degree of mental disturbance or emotional disorder, however boisterously it may be manifested, into the hope that copious and active depletion will meet the indications.**** I would recommend less loss of blood, where indicated at

all, in the case of a lunatic, than in a sane patient, other things being equal. To bleed very copiously for pure insanity, even in its acute state, can have no good effect upon the mental condition, while it expends the vital forces, which are to be taxed, in all probability, to their utmost extent, before the disease is cured, and must suffer from a loss of the vital fluid. We would not be understood as proscribing venesection in all cases of lunacy, but are of opinion that its use should be confined, as in other complaints, to meet special symptoms.

To local bleedings there cannot be the same objections urged as against venesection. It does not produce the same shock upon the system, nor so much lower the vital forces; but even this is by no means to be used merely because a man is mad."—*Dr. John R. Allen, Superintendent of the Kentucky State Lunatic Asylum, in the American Journal of Insanity, Vol. 6, pp. 274–5.*

§ 21. "It is hardly necessary to add that, while great caution is required in the use of depressing agents, inflammatory action is, in every instance, to be promptly met by the use of active and efficient depletion, both topical and general, commensurate with the severity of the case. The most intense nervous excitement, however, which is sometimes mistaken for cerebral inflammation, can never require this treatment. It is in view of errors of this sort that the general practitioner is recommended to guard against depletion and its too often disastrous consequences.—*Dr. E. K. Hunt, in notes appended to the translation of Esquirol's Maladies Mentales. Vide p. 89.*

In lypemania, or melancholia, "it may be proper to remark that drastic purgatives are very rarely requisite, and general bloodletting still less so;* while, to obviate local congestion, topical depletion may sometimes be proper."—*Ibid, p. 233.*

* The author evidently means *more so*; i. e., *more rarely* requisite.

§ 22. We now come to British authorities. A few years ago, the English Commissioners in Lunacy addressed to the various physicians having charge of asylums within their jurisdiction, a series of questions in regard to the treatment pursued by them. The answers are appended to the Report of the Commissioners, for 1846. Although they are given in a general or summary manner, they are sufficiently definite, for the most part, in reference to the subject of bleeding, to answer our purpose. I propose to quote these authorities, generally in their own words, beginning with the physicians to the large metropolitan hospitals, St. Luke's and Bethlem.

“Dr. Sutherland never employs general bleedings, because, after the acute stage has passed, great prostration of strength follows, and the state of the body, exhausted by frequent paroxysms, is much the worse for the loss of blood. He has known death from exhaustion, and dementia caused by bleeding. He considers the violent paroxysms of the acute stage as depending not on inflammation, but on irritation. He thinks the arterial congestion which is found in such cases, *post mortem*, the result not of inflammation but of irritation; an effort to repair the mischief sustained in some cases, and in others the effect of anæmia, which venesection would aggravate. Leeches should be applied with caution; the good results which follow are frequently only temporary. They certainly relieve the congested state of the vessels, and are useful when hyperæmia is present. They are, however, chiefly useful when locally applied, in nymphomania and at the critical period.”—*Dr. Sutherland, of St. Luke's Hospital.*

§ 23. “Bloodletting is never resorted to except in cases of apoplexy and phrenitis.” *Dr. Monro and Sir Alexander Morison, of the Royal Hospital of Bethlem.*

From the report of the Commissioners, it would appear that they consider the authority of Dr. Sutherland as second to none. Sir Alexander Morison has for many years been well known in Europe and America, by his works upon insanity. I now proceed to the county asylums.

§ 24. "I am convinced that great blood letting is rarely admissible, and generally dangerous, in insanity; and that local bleeding, by leeches, is safe and serviceable in most cases."—*Dr. Conolly, of the Middlesex County Asylum, at Hanwell.*

"General bloodletting is scarcely ever resorted to, and topical only very rarely."—*Samuel Gaskell, F. R. C. S., of the Lancaster County Asylum.*

§ 25 "Venesection never employed. Leeches to the temples, cold water, or evaporating lotions applied to the head."—*Dr. Corsellis, of the Asylum for the West Riding of Yorkshire.*

§ 26 "General bloodletting is a very rare occurrence indeed with me, and I very seldom adopt local bleeding. I have recourse to the former remedy only in cases where there are evident signs of acute inflammation of the brain or its membranes, and to the latter, where there are symptoms of congestion of the brain, with vascular excitement."—*Mr. Holland, of the Surrey County Asylum.*

"Topical bloodletting by cupping or by leeches. General bloodletting has not been employed."—*Sir Alexander Morrison, also of the Surrey Asylum.*

§ 27 "Bleeding will not cure mania. It will generally aggravate instead of alleviate the symptoms, for the loss of blood induces restlessness, and exhausts that strength which ought to be supported. The state of the pulse may be taken as a good criterion here, for it rarely, if ever, has that hard and incompressible beat which accompanies inflammation. Topical bleeding, by

means of cupping or leeches, to relieve local congestion, may, however, in certain habits, be often resorted to with advantage, whilst, in all, due attention should be paid to the stomach and bowels."—*Mr. Poynder, Kent County Asylum.*

§ 28 "Local depletions and counter-irritants, viz., cupping, setons, leeching, &c., if there should appear, on examination, enough of the physical signs of congestion within the head to impute thereto either the causing or maintaining of the maniacal condition."—*Dr. Huxley, lately appointed Superintendent of the Kent Asylum.*

§ 29. "The views which I have taken of insanity, and successfully adopted for nearly thirty years, precludes recourse to any depletive measures, either by bleedings or antimonials. General bleeding, previous to admission, has confirmed many of our cases, and on post mortem examinations of others, who have died where it was known to have been employed, the appearances were rather the result of cerebral irritation than inflammatory action; or of sanguineous infiltration, rather than inflammatory softening of substance."—*Dr. Kirkman, Suffolk County Asylum.*

§ 30. "The remedies used in cases of mania are local abstractions of blood, by leeching or cupping, from the forehead, behind the ears, or the nape of the neck, cold applications, &c."—*Dr. Button, Dorset County Asylum.*

§ 31 "Dr. Oliver has never prescribed general bleeding in acute mania, and cannot undertake to say what would be the result of such practice. He has seen some benefit arising from bleeding by means of leeches applied to the scalp, and considers that measure advisable in cases the symptoms of which indicate much congestion in the vessels of the brain."—*Dr. Oliver, Salop County Asylum.*

§ 32. "General bloodletting I never use, and cannot therefore give an opinion upon (it.) Local bloodletting I use frequently, by leeches to the groin, temples, or neck, or by cupping the nape of the neck."—*Dr. Bucknill, Devon County Asylum.*

§ 33. "The local abstraction of blood, counter-irritants, &c. *** In cases of acute mania I have seldom found depletion advisable; it is too often the consequence of positive weakness and functional disorder, and is invariably aggravated by the antiphlogistic treatment."—*Mr. Prosser, Leicester County Asylum.*

§ 34. In many instances the patient, when brought to the Asylum, is in so prostrate a condition, either from exhaustion produced by the disorder itself, from having refused food, or from the extent to which bleeding, purgatives, and low diet have been carried, that the course of treatment is at once clear; and good, nourishing diet, stimulants and tonics often restore the patient, unless, as is too frequently the case, the symptoms of sinking have already set in.

"The injurious effect of active medical treatment in cases of mania, and the tendency there is to exhaustion and sinking, is so fully established, that the general practice in this Asylum is chiefly directed to supporting the vital powers, subduing the cerebral irritation, and correcting the existing physical derangement, not by any peculiar or specific mode of treatment, but upon general principles.

"In pure cases of mania, however great the excitement may be, general bleeding is never employed. The cerebral irritation is often materially relieved, and every advantage gained, by local bleeding, without materially depressing the patient's strength. For this purpose, leeches to the temples, or behind the ears, and cupping

on the same parts, or on the nape of the neck, are the means usually employed, due regard being had, even in using these, to the amount of vascular action, and condition of the patient.”—*Mr. James Wilkes, Stafford County Asylum.*

§ 35. Dr. Powell, of the Nottingham County Asylum, gives the following brief synopsis of his treatment. “Seclusion, subdued light, cold to the head, warm baths, mild aperients, opiates, generous, easily-digested diet, temperature about fifty-eight or sixty. In relaxed or feeble habits, direct and diffusible stimulants, such as ether, camphor, musk, opium, wine, ale and porter.” It will be perceived that this *multum in parvo* makes no allusion to bleeding, either general or local. Hence it may be inferred that it is never prescribed, or so rarely as not to be considered among the usual means of treatment.

§ 36. “General bloodletting has been rarely practised, but sometimes with great efficacy, viz; in plethoric states threatening apoplexy, or in a congested state of the heart and great blood-vessels. Local depletion from the head and nape, in congestive or subinflammatory states of the encephalon, and from the thighs in amenorrhoea, has been found effective, but in some cases of threatened general paralysis the blood drawn by cupping has been found thin and deficient in fibrine.”—*Dr. Tyerman, Cornwall County Asylum.*

§ 37. The practice of Dr. Hitch, of the Gloucester County Asylum is not contained in the Appendix, from which the foregoing authorities are extracted, but is thus quoted by Mr. Farr, in his work on the Statistics of English Lunatic Asylums. “The use of the lancet, leeches, cupping-glasses, blisters, drastic purgatives; the prac-

tice of shaving the head are totally proscribed."

§ 38. From physicians to Military and other Hospitals. "In cases of mania, general bloodletting is very rarely advisable, but during the early stages, and when of a recurrent form, topical bleeding by leeches to the temples, &c."—*Dr. Anderson, Haslar Military Hospital.*

§ 39. "In acute mania, local bloodletting chiefly by cupping-glasses, warm baths." &c.—*Dr. Sillery, Military Asylum at Yarmouth.*

§ 40. "With increased circulation in the brain and its membranes, pulse hard and rapid, tongue dry and parched, skin hot and burning, cautious venesection, leeches to the temples," &c.—*Dr. R. Davis, Bristol Pauper Asylum.*

§ 41. The next series of authorities are from public institutions, sustained either wholly or in part by charitable contributions.

"Severe antiphlogistic measures ought seldom to be resorted to, and I have nearly always found that where general bleeding has been practised, before admission, cases have assumed a less favorable aspect than might otherwise have been anticipated. This measure I have never thought it prudent to resort to. In the more recent cases, attended by symptoms of cerebral determination or congestion, I very commonly have recourse to bleeding from the head with leeches or by cupping, generally the former, and usually with marked advantage."—*Dr. Thurnam, Friends' Retreat, near York.*

§ 42. "I hold insanity, in all its forms, as we meet with it in hospitals, to be a disease of debility and seldom admitting of depletion. General bleeding can hardly ever be admissible, except for some accidental disease, and then it should be sparingly used. Topical bleeding

might occasionally be beneficial, but I have not, for many years, used either.”—*Dr. Wintle, Warneford Hospital, Oxford.*

§ 43. “In recent and in young subjects the daily use of the shower-bath, purgatives, with hen-bane at night moderately, nutritious diet, with air, exercise and occupation, avoiding all general and local depletion.*** There appears to be, in the disease itself, something so analagous to debility, as to call for all our aid to sustain the system against it, and this is most effectually done by food, in the liquid form, beer, porter, or even wine, and in the solid, by animal food.”—*Dr. Nesbitt, Northampton Asylum.*

§ 44. “Where tendency to local inflammation is shown, leeches. General bleeding has rarely or never been resorted to, and the experience of its employment, derived from those cases admitted after it had been freely practised, shows it to be evidently injurious, by breaking down the constitution, and conducing towards an uncontrollable mania, very apt to settle down into dementia.”—*Drs. Miller and Shafter, St. Thomas’ Hospital, Exeter.*

§ 45. “Leeches to the temples, cold water or evaporating lotions to the scalp,” &c.—*Dr. Metcalfe, York Lunatic Hospital.*

§ 46. Mr. Padley, of the Liverpool Asylum, describes his treatment with considerable minuteness, but makes no allusion to bleeding, either general or local, excepting in reference to its effects as practised before admission. “The patient,” says he, “being pale, emaciated and enfeebled from previous loss of blood, or other causes, though still excited,—a generous diet, tonics, and sometimes even stimuli in moderate quantity.”

§ 47. The following authorities are from the proprietors, physicians, or surgeons of private establishments.

“In some, the loss of a few ounces of blood from the temples and the nape of the neck, is attended with advantage ; in others, it would be decidedly prejudicial.—Leeches to the pudenda are serviceable where, as is frequently the case in acute mania in women, the menstrual function is suspended.”—*Mr. Iles, Fairford Asylum.*

§ 48. “If the case were recent, and showed inflammatory symptoms, I should use cupping at the nape of the neck. Bloodletting I would very seldom employ, generally, but very much good I have frequently seen produced by the local application of the cupping-glasses, and especially of leeches in the nostrils, &c. However, blood-letting of any sort, I consider to be injurious generally, in all chronic cases.”—*Mr. Casson, Hull and East Riding Retreat.*

§ 49. “General blood-letting is seldom or never necessary in cases of insanity. The most mischievous results have followed its use in the more violent forms of mania. I have known an instance where perseverance in a course of depleting treatment ended in the death of the patient on the sixth day, without any appearance of amendment or remission of the violence in the mean time. Local depletion, by leeches or cupping the nape of the neck, is not liable to the same objections, and may probably be used in many cases with benefit, although my predecessors have very rarely had recourse to such means. I have, however, held the opinion, and my father, who preceded me and had an experience of upwards of thirty years’ practice, held the same, that insanity is a nervous rather than an inflammatory affection, depending usually upon disorder of the general health, and more especially upon a disordered state of the stomach and bowels, and organs of digestion.”—*Dr. Bakewell, Oulton House Asylum.*

§ 50. "I never employ general bloodletting as a remedy. Topical bleeding I have found occasionally useful."—*Mr. Mallam, at Hook Norton.*

§ 51. "Bloodletting, both general and local, has been practised in some instances, with good effect, more especially in recent cases, where the state of the circulation has appeared either to indicate or admit its adoption. In plethoric habits, and in all cases in which we have met with high arterial action, venesection to a greater or less extent has been prescribed. In other cases cupping or leeches have been substituted. As a class, however, our patients neither require nor admit depletion."—*Dr. T. B. Bryan, of Sir Jonathan Miles' Asylum, Hoxton House.*

§ 52. "I commonly abstain, unless impelled by some apparent, unavoidable necessity, very carefully from general bloodletting, under a conviction that the lancet is always to be feared in cases of insanity. If I bleed from the general system, I always choose the temporal artery; and I have found, both in the asylum and private practice, great benefit occasionally from the operation, in cases of high excitement, but I do not resort to it frequently."—*Mr. Smith, Hadham Palace Asylum.*

§ 53. "In cases of acute mania, or nervous excitement, arterial action, such as would indicate an inflammatory condition of the brain, is absent, the pulse is rapid and small, easily compressible. Bloodletting, either general or topical, is decidedly injurious."—*Mr. Phillips, Bethnal House.*

§ 54. "In the acute form, sometimes bloodletting, general and local; its employment and the quantity abstracted being regulated by a consideration of the patient's age, previous habits, and constitution."—*Dr. Robinson, Bensham Asylum.*

§ 55. "The strong, healthy, plethoric person, whose conduct, when admitted, is violent, and excitement great, becomes benefitted, in some cases, by general or topical bleeding. * * * Good plain food, the cautious use of wine and other stimulants, and malt liquors, is the *usual* practice in acute mania."—*Mr. Beverly, Whitmore House.*

§ 56. Dr. T. O. Prichard, of the Abington Abbey Retreat, under the impression that mental disease is generally connected with constitutional debility, has been in the habit of trusting the cure, in a great measure, to various tonic remedies, generous diet, with wine and cordials. "In recent cases," he observes, "where the reaction is excessive, and there is great vigilance, with heat of the scalp, I would use cold applications; and if I had reason to fear the existence of much passive congestion of the capillary vessels of the membranes of the brain, and noticed it to exist in those of the conjunctiva, I would apply leeches."

§ 57. "Topical bleeding, leeches, and sometimes cupping."—*Dr. W. Finch, Laverstock Asylum.*

§ 58. "Topical bleeding, followed by the shower-bath, &c."—*Mr. Simpson, Grove Place.*

§ 59. "If the head appears congested, topical bleeding is employed, and sometimes dry cupping. General bleeding is seldom used here, except where there is very decided determination of blood."—*Dr. Mackintosh, Newcastle-upon-Tyne Asylum.*

§ 60. "Leeches to the temples, &c. I am of opinion that general blood-letting is scarcely admissible in any form of disease affecting the insane."—*Mr. Atkins, Grove House Asylum.*

§ 61. "Bloodletting is much more cautiously resorted to than formerly, and, when its necessity is indicated, is generally effected by leeches, or cupping. Where con-

gestion is present it relieves, and is attended with benefit; but, indiscriminately employed, is of great injury, often producing prostration, from which there is great difficulty in recovering a patient."—*Mr. Gillett, Fairwater Asylum.*

§ 62. "I have found occasional topical bloodletting, by cupping or leeches, to relieve the congestion of the brain. I never bleed from the general system, except in cases of inflammation, irrespective of the mental disorder."—*Dr. Gilliland, Hereford Asylum.*

§ 63. "Cautious abstraction of blood, by local means, resorting but very rarely to general depletion."—*Dr. W. C. Finch, Fisherton Asylum.*

§ 64. "When it (insanity) arises from phrenitis it requires bleeding, cupping, leeches, mercury, &c. * * * * I very seldom bleed or deplete beyond purging, and, in the majority of cases, give tonics."—*Mr. Harris, Springfield Asylum.*

§ 65. "In some cases, light, local abstraction of blood."—*Mr. Bush, Retreat at Clapham.*

§ 66. "General bloodletting is only resorted to by us in those cases of mania in which the physical condition of the patient induces the apprehension of apoplexy, and never for the purpose of quieting a paroxysm of excitement. Previously to admission, most of our patients have been under medical treatment, and we have often had reason to suspect that the general bloodletting to which they have been subjected has been detrimental, and that it has, in some cases, induced permanent fatuity. We have found bloodletting useful in some cases of melancholia. In most forms of insanity, we find benefit derived by the local abstraction of blood from the head or nape

of the neck;—in some cases, by the application of leeches to the pit of the stomach, and, in females, to the groin.”

—*Drs. F. and C. Fox, Brislington House.*

§ 67. “Bloodletting; 1st. General. This I very seldom, if ever, have recourse to in acute cases, my experience being decidedly against its use. The depression following even its moderate employment, is frequently so great that the patient never rallies. 2nd. Topical. This, however, I consider a most valuable remedy, either by means of leeching or cupping. The former I generally employ, and apply to the head when much heat of scalp exists, or pain is complained of, or the patient has been subject to epistaxis; to the groin in suppression of hemorrhoids, and near the vulva in suppression of the catamenia.”—*Mr. Hill, Peckham House.*

§ 68. “The effect of bleeding, as a sedative or remedial agent, I have not had a fair opportunity of testing, though my impression is not favorable towards it; for the class of patients usually brought here, even in acute mania, are those who are generally suffering from debility, or in a state approximating that condition of body observable in delirium tremens, where bleeding is evidently injurious, and opiates and sedatives of the greatest advantage. I think, however, in plethoric and recent cases, when the powers of life are high, that general bleeding might be employed, to a certain extent, with a good effect; but, as a rule in almost all cases, leeches and cupping are to be preferred.”—*Mr. Paul, Camberwell House.*

§ 69. “As a general rule, the insane are not found to bear antiphlogistic measures as well as others. Bloodletting, in the form of leeches or cupping, is frequently had recourse to with benefit, in cases of either general or partial mania. When heat of scalp, or determination of blood continues, after the employment of purgatives, &c.,

the majority of recent cases require this remedy. General bloodletting is but rarely required, and has only been practised in cases of general plethora, accompanied with hemiplegia or epilepsy, or threatening apoplexy, or paralysis.'—*Dr. Palmer, Grove Hall, Bow.*

§ 70. Dr. Willis, of Shillingthorpe House, grandson of the former physician of that name, who was distinguished as a practioner in mental maladies, pursues a tonic plan in the treatment of mania. He does not allude to the abstraction of blood, in any way. "In corroboration of the efficacy of the tonic plan of treatment," he remarks, "where excitement is predominant, the late Mr. Warburton told me that, previous to his acquaintance with my family, bleedings and antimonials was the practice in use in his establishment, and that many patients died; but, that after Dr. Willis visited it professionally, similar cases recovered more quickly than others."

§ 71. The medical officers of fifty-two asylums describe their treatment of melancholia. Only thirteen of them mention the abstraction of blood. Their remarks upon the subject are comprised in the extracts subjoined.

"Leeches behind the ears or to the forehead give relief in some cases."—*Dr. Conolly, Hanwell.*

"When there is headache and symptoms of fulness in the head, the application of leeches is of service."—*Mr. James Wilkes, Stafford County Asylum.*

"In young women with suppression of the menses, I order leeches to the vulva, &c.—*Dr. Bucknill, Devon County Asylum.*

"When cerebral lesion is presumed to exist, local depletion."—*Dr. Tyerman, Cornwall County Asylum.*

"Moderate local depletion by leeches or cupping."—*Dr. Button, Dorset Co. Asylum.*

"In the earlier stages, bleeding from the head by leeches or cupping, is often necessary."—*Dr. Thurnam, Retreat near York.*

"Where the pulse is slow and labored, with heat of head, I use cupping at the nape of the neck."—*Dr. Casson, Hull and East Riding Asylum.*

"Bloodletting was practised in one instance with good result."—*Dr. T. B. Bryan, Hoxton House.*

"Topical Bleeding and occasional drains in cases of suppressed discharges."—*Dr. W. Finch, Laverstock House.*

"Relieve the head from pain and fullness by leeches and blisters."—*Mr. Atkins, Grove House.*

"The local and sometimes general abstraction of blood."—*Dr. W. C. Finch, Fisherton Asylum.*

"Melancholia, as an idiopathic disease, is the only form of insanity in which general bleeding has appeared to us to be useful; in such cases we often open the vena saphena."—*Drs. F. and C. Fox, Bristlington House.*

"If there be much heat of scalp, or pains referred to the head, leeches to the temples or behind the ears. If the catamenia be suppressed, leeches near the vulva."—*Mr. Hill, Peckham House.*

§ 72. We now come to other English authorities.

"Severe antiphlogistic or reducing measures are seldom resorted to. It has been found that where venesection and other means of the same kind have been carried to a great extent before admission, the recovery has been more tedious, and, perhaps, in some cases prevented. In cases, however, of various forms in the recent stage, the cautious employment of local bleeding either by leeches or cupping, the use of brisk purgatives and aperients, of evaporating lotions to the head and stimulating pediluvia,

followed sometimes by blisters to the nape, has been very frequently attended by decided advantage.”—*Samuel Tuke, Page 59, of “The Statistics of the Retreat; &c., from its establishment in 1796, to 1840.”*

“From the history of patients brought under care at an early period, it was evident that the reducing system had been extensively used; low diet, as well as active depletory means, had generally been resorted to. To the abandonment of this system must, we believe, be attributed, in no inconsiderable degree, the mental recovery of many patients, as well as the preservation of life, and the increase of its comfort.”—*Ibid, Page 34 of the “Review of the Early History of the Retreat near York.” York, 1846.*

§ 73. “In the early stage, particularly if the person be young and of robust habit, there will occasionally be found increased vascular action of the brain; and where we are satisfied that such exists, both general and local bleeding may be beneficial. I have seen much benefit result from this mode of treatment; but we cannot exercise too much caution in recommending the adoption of active depletion in cases of this kind, for I have witnessed the most lamentable effects result from this practice. As a general rule, in these cases, we have excitement without power—the brain, pathologically considered, being in a condition resembling that of delirium tremens. Should insanity manifest itself in a person young in life, with a plethoric constitution, or in women suffering from the suppression of some accustomed discharge, and should there be both local and general indications of considerable vascular action going on in the brain, accompanied by great pain of the head—throbbing of the carotids, quick pulse, intolerance of light, dry, hot skin, the vessels of the conjunctiva injected, the pupil contracted, then the antiphlogistic treatment is absolutely required. These are

symptomatic of active disease going on in the brain, requiring active treatment for its removal. But we cannot be too guarded in our use of depletion.

“When the insanity is the effect of long-continued grief, accompanied by sleeplessness, mental anxiety, religious despondency; and is connected with physical disease of the abdominal viscera, or chronic indigestion, the patient will not bear active treatment. When the pulse is small and rapid, with extreme paleness of the countenance, indicating the presence of exhaustion, whatever may be the degree of maniacal violence, bleeding should never be resorted to. In such cases the functions of the brain are increased in force, while the circulation is depressed.

“Should bleeding be necessary, it ought to be followed by an opiate. I have seen the disposition to suicide entirely removed by the exhibition of a full dose of Morphia. Again, I have witnessed the same result from the local abstraction of blood from the head.”—*Dr. Forbes Winslow; page 21 of Essay on the Incubation of Insanity.*

§ 74. “If the patient has been exposed to causes sufficient to produce inflammation of the brain, and if redness of the countenance, injection of the conjunctiva, and heat of skin, very early in the disease, point out increased vascular action, with increased power, antiphlogistic remedies, with bloodletting, principally from the jugular vein, are to be employed.” After relating a case in point, he adds “This case is only, however, an example of *a few*, where the mental disease is going on in consequence of increased vascular action. In the great majority of cases the functions of the brain, in mental derangement, are increased in force, while the circulation is depressed, extremely quick and feeble, and the action of the heart gives way at the smallest abstraction of blood; and yet these are often attended with raving delirium, great in-

crease of muscular force, and are, in fact, what are termed *high cases*. The consequence of such practice, is either the more frequent *returns* of the high stage, or the patient sinks into one approaching idiocy."—*E. J. Seymour, M.D.* page 65 of "*Observations on the Medical Treatment of Insanity.*" *Croonian Lectures before the College of Physicians, London, 1831.*

§ 75. Dr. Seymour also gives, (p. 68,) a statement, in their own language, of the practice of Messrs. Beverley and Philips, at Mr. Warburton's Asylum, Bethnal Green, which contained four hundred patients. It is as follows.

"The number of patients admitted with vascular excitement, requiring bloodletting, are very few indeed. We seldom or never use the lancet in cases of excitement, if there is no evident effect upon the brain from increased arterial action, so as to lead us to fear an approaching attack of apoplexy or paralysis. The reason we do not use the lancet in cases without any such symptoms existing of disease going on in the brain, is, that we have done so in several instances, and the result was not favorable. The patient became reduced from the loss of blood, and the excitement was not abated. The powers of the constitution gave way, the tongue became typhoid, and the patient sank into a state of collapse, and died." To this, Dr. Seymour appends the following remark "As the result, then, of experience in cases of excitement, I presume that these arise from increased nervous energy, not depending on increased action of the heart and arteries, but on increased sensibility of the brain itself, and that bloodletting is not found useful."

§ 76. "Following example rather than experience, I tried bloodletting for several years ; but discovering my error, I became more cautious; and, I believe that I have scarcely ordered venesection in six cases of simple ma-

nia or melancholia in as many years. My conclusion is, that since I have changed my practice more have recovered, and certainly the cases have been less tedious and intractable.

“ Three disordered conditions in the circulating system exist in mental derangement. 1st, There may be too great a quantity of blood flowing to the brain at the expense of other parts, which suffer a diminution of it, thus producing a real determination. 2d, There may be an excessive momentum in the vascular system, indicative rather of morbid action than of excess in quantity. And 3d, There may be a deficiency in quantity, by which sufficient blood is not propelled to the brain to give the intellectual organs their wonted energy. I may add that mania, like gout, may be occasioned by a spontaneous effort to relieve general plethora, or to rectify a defective balance in the circulation.

“ Now, it must be evident, that large abstractions of blood from the system in any of the three conditions can never correct the error in the circulation. * * * * It is only where a real state of plethora exists, or apoplexy is pending, that general bloodletting in mental derangement can, in my opinion, be justified. * * * In no malady that affects the human body, is the fallability of this criterion (the pulse,) so conspicuous as in insanity. Drs. Cox, Parry, Mayo, and others attest the disproportion between the stroke of the carotid and [radial pulse in cases of insanity. The former may be strong and vibrating, while the latter is frequent, small and oppressed.” After arguing against the existence of fever or inflammation, he says “ I conclude therefore, that venesection cannot be justified in any case of pure insanity, whether upon the principle of febrile or inflammatory action accompanying it, or of local determination.”

§ 77. "Ferrier and others have remarked how suddenly the strength of lunatics gives way on general bleeding; my experience confirms this fact. Unhappily, mere raving madness, which always requires support and nourishment, is often mistaken for the furious delirium of physical excitation, which admits of depletion: hence, frequently, the sudden prostration of lunatics after general bleeding. *But the same effect most unaccountably often follows where the symptoms seem to justify bleeding.*

"I own that I regret the sweeping condemnation both of the lancet and cupping in mental derangement which Dr. F. Willis inculcates; because it is possible that the one may be required, and I am sure that the other, or leeching, can seldom be dispensed with in any recent case.

"In every case of recent insanity which I have seen, local abstraction of blood from the head itself, or contiguous, as the nape of the neck, or between the shoulders, has been indicated. The mode has been by cupping, or by leeches. Cupping on the occiput is to be preferred. Celsus says this lessens the malady, and brings on sleep. * * * The quantity of blood to be taken away must be regulated by circumstances. * * * Patients are often so sensible of the relief of topical bleeding, that they will frequently solicit it as a boon."—*P. 583 et seq. of "Commentaries on the Causes, Forms, Symptoms, and Treatment, Moral and Medical, of Insanity."* By George Man Burrows, M. D.

§ 78. Mischievous and fatal results constantly arise in practice from want of attention to the cause of the increased circulation, particularly in cases of mania. Very copious evacuations and profuse bleedings from the system are resorted to, and after the animal strength of the patient is exhausted, he becomes quiet, but the men-

tal delusion still remains. Supposing the cause of the disease to be a permanent one, such as any moral cause, the brain, or a portion of it, continues to be unduly exercised, and to obtain from the system more than its due share of the blood, which the lancet has left. But when the loss of blood has been excessive, the vital power, in numerous instances is never recovered, and the patient either dies or sinks into a state of fatuity. Unfortunately, many of the patients received into public hospitals, as recent cases, have undergone this exhausting process.”—*Sir W. C. Ellis, M. D., pp. 149-50, of a “Treatise on the Nature, Symptoms, Causes and Treatment of Insanity.”*

In cases caused by *coup desoleil*, he recommends “copious bleeding from the temporal artery;” and in those which originate in prolonged intoxication, similar treatment, if the patient be strong and his system undebilitated by habitual inebriety. He then continues, as follows:

“In the treatment of insanity arising from physical injuries, it has been seen that very large bleedings and copious evacuations are frequently of great use; but this is not the case in insanity from moral causes. In these cases, although there exists an excess of blood in the brain, yet, as this arises from the brain, or some part of it being constantly over-excited, and therefore receiving more than its due share of blood from the system, the withdrawing any portion from the system generally will not alter the proportion which the brain will appropriate to itself, during the continuance of the exciting cause. But, in consequence of this extra exertion of the brain, the constitution needs all its vital energy for its support. In the treatment, then, of insanity arising from moral causes, no greater quantity of blood ought to be abstracted, than that which will be sufficient so to reduce the inflammatory action in the brain, as from time to time to

relieve the vessels and prevent the coming on of diseased organization; and, of course, the more directly the blood is taken from the diseased part, the less it will be requisite to abstract. * * * The head should be shaved, and the parts of the scalp under which it is probable the excess of circulation is taking place, should be repeatedly bled with leeches, or cupped, a small quantity of blood only being abstracted at each time of bleeding."

"There are cases in which the sanguineous circulation is so excessive as to make it requisite to abstract blood from the system by the lancet, as well as from the scalp by leeches."

"It may be taken as a principle, that a person insane from moral causes is one who can not, without injury to the constitution, bear depletion; and the lancet must be used with great caution, even in the plethoric, and in those who are apparently the strongest. The local bleedings with leeches may be repeated as often as it is judged that the vessels require relief."

§ 79. All our experience has led us to conclusions precisely similar to those of M. Esquirol. In the youthful and obviously plethoric, and in the first periods of the attack, general bloodletting may be adventured on cautiously; unless, indeed, the symptoms approximate to, or prove identical with, those of phrenitis, when, indeed, copious venesection becomes indispensable to subdue action so violent in itself as immediately to threaten the patient's life.

"At later periods of the disease we have never known general bloodletting to do any thing but harm; and we are of opinion that even topical bleeding may, in the vast majority of cases, be advantageously dispensed with. There are others again, in which, even at the beginning, it is productive of unmingled mischief—where mania or

melancholia that was in all human probability perfectly within the reach of art, is changed into incurable fatuity or hopeless idiocy." These are persons of delicate health and constitution, of nervous or sanguineo-nervous temperaments, who have been subjected to depressing influences prior to the invasion of insanity.—*William B. Neville, M. D.*, pp. 163-4, of a treatise "*On Insanity, its Nature, Causes and Cure.*" London, 1837.

§ 50. "Act upon the pathological system by drugs, bleeding, or counter-irritation, according to sound principles of medical practice. Do not assume that, because you have perverted cerebral function, you have to deal with inflammation."—*Daniel Noble, F. R. C. S., Medical Officer of the Clifton Hall Retreat*, in "*Elements of Psychological Medicine.*" London, 1853.

The same author, in treating of cases caused by violent injury to the head—the only ones in which he appears to admit the propriety of bloodletting, makes the following remarks in regard to them, after the fever and heat of scalp have disappeared, and the appetite and digestion returned—but the insanity still persisting.

"I have no hesitation in saying that, unless there be some very unusual plethora, or local congestion, more harm than good will be done by further depletion. Local bloodletting, in the beginning of such cases, is generally highly useful; but afterwards, when a settled derangement seems established, nothing but mischief can follow its use, unless there be some special reason for it. It is very rarely right, indeed, to deplete in insanity, particularly by opening a vein. Maniacs have been interrogated, during their convalescence, concerning their own experience after general bloodletting, and the replies have been something after this fashion. 'It was after being bled that I ceased to know what I did, and what

was going on about me ; it was after losing blood that I went right out of my mind.' The emotion of sensibility almost always becomes painfully exalted after blood-letting ; the face is blanched, the pulse small, and the pupils somewhat dilated.

"It is a great mistake to assume that, because the delirium continues, inflammation is its necessary or even its probable cause. It can not be repeated too often, that the highest excitement may characterise the cerebral acts, without there being so much as irritation of the brain, in a physical sense. A state of debility even may bring about these phenomena.

"Mental maladies, altogether, are very analagous to ordinary nervous ailments, as regards their duration, their seeming spontaniety in many instances, the absence of inflammation, and the bad effects of debilitating treatment. * * * We have mental aberration in delirium tremens, and also in certain forms of hysteria, yet we do not bleed in those circumstances ; opium and stimulants are rather administered."—*P. 273 et. seq.*

§ 81. "Since in most cases of mental disease there exist symptoms of high excitement ; the use of the lancet would seem generally indicated ; but unless there be obvious plethora, or evident determination and congestion about the head, bleeding may increase rather than diminish the disease. When this evacuation is determined on, it may be effected either by leeches, cupping, venesection in the foot, arm, or neck, or by arteriotomy."—*Joseph Mason Cox, M. D., p. 89 of "Practical Observations on Insanity." London, 1804.*

§ 82. Bleeding to any great extent does not often seem to be desirable, and, except in recent cases, does not even appear to be admissible. Unless, therefore, in young persons, where the pulse stands at from 96 to 100,

with a white tongue, hot skin, and suffused eye, it should not be resorted to. When these appearances are present, it will undoubtedly be found expedient, if not essential to the safety of the patient. But the great tendency in all cases of insanity to change their type and form, the great inequality of the circulation and the subsequent torpor even of the arterial action, accompanied at times with excessive debility in the most acute cases, would establish the propriety of looking carefully for the unequivocal appearances which would alone give a sanction to it as an anti-maniacal remedy.”—*William S. Hallaran, M. D., pp. 50-51 of “Observations on the Cure of Insanity.” London, 1810.*

He remarks that he never saw any benefit from venesection, and therefore he generally bled from the temporal artery.

§ 83. “Bleeding, at least general bloodletting, is scarcely ever necessary in the treatment of the insane. The collapse that follows depletion is frequently not only alarming, but fatal. In insanity, the excitement is so transient that the pulse cannot be considered a sufficient guide to direct our practice. However, when the subject is plethoric, and there is an evident increased impetus in the cerebral vessels, moderate bloodletting may be resorted to with good effect.

“Local bleeding, by leeches or cupping, will be found more advisable. The blood should be drawn from the temple and the back of the neck. Leeches should be applied repeatedly, and in small numbers, and their effect aided by warm fomentations.”

“Leeches should be applied, in cases of suppressed habitual epistaxis, to the temple and nostrils; in cases of irregular menstruation, to the labia pudendi; and in those

of suppressed hemorrhoidal discharge, to the margin of the anus.

“In the delirium that follows intoxication, which has not unfrequently been considered maniacal, bleeding is not only objectionable, but most dangerous—patients having been known to sink into a fatal collapse immediately after venesection. Bloodletting is equally objectionable in the delirium following wounds, which has also been considered as an attack of mania.

“When cerebral determination is evident, we should be careful, ere we proceed to bleeding, to ascertain the state of the circulation. The carotid artery may be found to pulsate with apparent strength and fullness, but if it is easily compressible, and the radial artery is feeble in its pulsation, general bloodletting is not admissible. When pressure on the jugular vein produces a sense of heaviness in the head, with pain, but these symptoms cease the moment the pressure is suspended, bleeding is dangerous. When the extremities are cold, the skin clammy, the tongue furred, cold and tremulous, with tremor of the limbs, and rigor, notwithstanding the symptoms of cerebral congestion, general bleeding is dangerous.

“In puerperal madness, general bloodletting is not advisable. Mania will not unfrequently assume the character of dementia and fatuity, after imprudent bleeding.” —“*S. G. Millengen, M. D., formerly Superintendent of the Hanwell Asylum, pp. 114–116 of “Aphorisms on the Treatment and Management of the Insane.” London 1840.*

In a note, page 117, Dr. Millingen says, “When I was a pupil in the Hotel Dieu, the practice in the insane ward was particularly unsuccessful, and the physician, Bosquillon, was a strenuous advocate of bleeding.”

§ 84. “Remedies which have a powerful tendency to

weaken the body are sometimes, I fear, in the worst cases of delirium, unskilfully resorted to. Whether the patient be old or young, strong or weak, whether laboring under the high state (mania,) or low state (melancholia,) of this disorder, it is deemed a case for the lancet, or for cupping, and erroneously, I am persuaded, blood is copiously drawn from the patient. The advice of some authors concerning these measures betrays much inconsistency. While they extol bloodletting as most beneficial in the cure, nay even as essential to the safety of the patient, they at the same time very forcibly demonstrate its impropriety and mischievous tendency; they shew, in fact, that the nature of the complaint forbids its use.”—*Francis Willis, M. D., F. R. C. P., pp. 90–91 of “A Treatise on Mental Derangement.” Gulstonian Lectures for 1822. London, 1823.*

§ 85. “I have had many occasions to lament the use of the lancet by inexperienced physicians. I fully agree with Dr. F. Willis in his observations on this practice, and earnestly recommend them to the serious consideration of practitioners inexperienced in the treatment of insanity. In addition to what I have quoted, I must add, that in the high state, (mania) as described by Dr. Alexander Chrichton, *I never saw bleeding lessen the violence of the paroxysms, but, on the contrary, I have seen the excitement augmented by it.* Puerperal insanity is of the same description of disease as the high state, and the same observations apply to it.” *Paul Slade Knight, M. D. Naval Surgeon, and Surgeon to the Lancaster County Asylum, pp. 44–5 of “Observations on the Causes, Symptoms, and Treatment of Derangement of the Mind.” London. 1827.*

§ 86. “It is too common an error in practice to regard violent delirium and fury as unequivocal signs of an inflammatory state of the brain. They frequently accom-

pany a state of congestion, arising from a want of healthy tone of the vessels, at the same time we perceive that every thing under the head of stimuli, which is capable of determining to the head, increases the disease—either physical or mental stimuli. The state of the pulse, the increased temperature of the skin, the white tongue, and suffused appearance of the tunica conjunctiva, but more particularly the tense throbbing of the carotid or temporal arteries, will often indicate the necessity of general and local bleeding.”—*John Syer, Surgeon &c., p. 190. of “A Dissertation on the Features and Treatment of Insanity.” London, 1827.*

§ 87. “When the brain is manifestly inflamed, as marked by the intolerance of light, red eyes, weak pulse, and fever, especially if that inflammation be of the sthenic kind, we shall find our account in pretty free and copious bleeding; but there is much error, and much danger too, in considering and treating all brain irritation as constituted of brain inflammation.”—*David Uwins, M. D., p. 200 of “A Treatise on those Disorders of the Brain and Nervous System which are usually considered and called Mental.” London, 1833.*

Upon the principles here laid down, as will hereafter be more fully shown, probably not one case in a hundred, even of acute mania, would require venesection. But Dr. Uwins appears, himself, to abandon these principles in the treatment of puerperal mania. “Here,” says he, alluding to this form of the disease in general terms, and making no exception, “bloodletting is called for pretty freely; but I have almost always found my account in administering, even in this malady, pretty considerable quantities of opium immediately after bleeding.” p. 205. Comment upon this is reserved for a more appropriate place.

§ 88. "When the mental disorder continues after the corporeal symptoms have been attended to, and no definite indication presents itself, empirical means have been employed, in particular, bleeding, which, although absolutely necessary in some cases, has been too indiscriminately employed. It is absurd to bleed a madman merely with a view to calm his fury, for he is often rendered more violent after the operation. The extent to which bleeding has been carried is scarcely credible."

p. 86. "Congestion is known by strong pulsation of the carotid arteries, flushed face, little or no sleep. Purgatives are particularly useful; likewise cold applications to the head. Abstraction of blood is also sometimes required."

p. 88. "The inflammatory state is a more advanced stage of the last mentioned state of congestion. It is indicated by pain and tension in the head, the eyes bloodshot and glistening; the pulse in the carotid arteries and at the wrist is quicker and harder than in congestion; the thirst is urgent, and the skin hot and dry. The treatment consists in unloading the vessels of the head, by bleeding from the temporal arteries or jugular veins, cupping and scarifying &c, cold applications to the head, warm bathing, and active purgatives."—P. 89, *Alexander Morison, M. D. in "Outlines of Lectures on Mental Diseases."* London, 1826.

§ 89. "Though we hold insanity to be an asthenic, non-inflammatory disease in so many instances, it will be seen that we do not disapprove of the abstraction of blood in some cases; but we most decidedly affirm, that *not one case in every hundred requires bleeding from the arm, at any time*, much less that periodical bleeding which has left its permanent results indelibly marked in many cases forever consigned to asylums. In cases where there are pain and fullness of the head, with depressed spirits,

while general bleeding will do harm, the local abstraction of blood will do good, and the nearer it is to the longitudinal or the lateral sinus, the better. For this cause, we have thought Dr. Wallis's longitudinal incision was the most valuable remedy in these cases, and we have not been disappointed. * * * * Still there are many cases where the distress in the head is greatly relieved by leeches applied either behind the ears, or within the nostrils."—*C. M. Burnett, M. D. pp. 78, 79, of "Insanity tested by Science."* London, 1848.

The method of bleeding above referred to, is advocated in the subjoined testimony of Mr. Watson.

§ 90. "In mania, the result of cerebral congestion, and of recent origin, blood-letting general or local. A simple incision, four or five inches in length, into the scalp appears to me to combine the good effects of the two, viz: rapid detraction of blood and the relief of local congestion."—*Mr. Watson, Cumberland County Asylum, Dunston Lodge.*

§ 91. "While bleeding is generally injurious in the treatment of mania, it may occasionally, although rarely, be indicated. * * * It should never, in cases of insanity, be resorted to without the most paramount necessity, and even then not largely, as the constitution will not rally after excessive depletion. * * * In a robust, healthy individual, accustomed to epistaxis, or in a female suffering from congestion at the change of life, especially if resident in the country, bleeding may be advised; but there are very few persons suffering from insanity who can bear general depletion when living in densely crowded cities.

"We must never be deceived by mere vascular excitement; but when it is considered necessary to take

away blood, and yet the powers of the patient would not justify general bleeding, cupping or leeches may be resorted to.

“Many cases of insanity arise from extreme irritability, dependent on prostrated power. * * * In these cases, mistakes are but too frequently made; *irritation* is confounded with *inflammation*. The maxims so ably taught by Mr. Travers are forgotten; the object to calm the action, not to diminish from the power—this nervous power being much more easily depressed than raised.

Should this advice be neglected, and bleeding be ordered, stupor, or coma, or confirmed mania may be the consequence. In many cases where there is the most ferocious delirium, with great muscular power, the pulse is very quick, weak, and fluttering, and even the slightest depletion at once knocks down the powers; but even if the patient should again rally, there is great danger of his becoming idiotic. As Dr. Marshall Hall has so truly stated, under *irritation*, exhaustion is sooner produced than in health; while under *inflammation*, the system bears loss of blood with less exhaustion than in health.

“Anaemia of the brain, so strongly pointed out by Dr. G. Burrows, has been but too little regarded until lately. Many cases where there is great action require stimulants and support.”—*Joseph Williams, M. D. pp. 29 et seq. of “An Essay on the use of Narcotics and other Remedial Agents calculated to promote Sleep in the Treatment of Insanity.” London, 1845.*

§ 92. “It is an undoubted truth that in fifty maniacs laboring under the highest degree of the sthenic form, not more than from seven to ten of them will require this most powerful means of reduction of the vital power; and let it never be forgotten, that sudden and profuse bleeding

is always—even in this form, however furious,—highly dangerous, and never necessary.”—George Nasse Hill, *Medical Surgeon*, p. 287 of “*An Essay on the Prevention and Cure of Insanity.*”

§ 93. We have the following authorities from Scotland. “The violent excitement which is frequently the first certain indication of an attack of insanity, has, to those unaccustomed to witness such cases, a very alarming appearance; and, under this impression, measures of a permanently exhausting nature, such as bleeding or the copious use of antimonials, are apt to be had recourse to—with the effect, certainly, of quieting the patient for a time; but at the expense of such an amount of strength as it is not always possible to restore afterwards, by a long course of invigorating remedies, even if he escape being thrown into a state of hopeless dementia. Such an error may be avoided by paying attention to the indications offered by the pulse, which is almost never raised in proportion to the violence of the delirium, but, on the other hand, is, not unfrequently, feeble, and indicates debility of the system; and, where this is the case, the most cautious topical bleeding only is admissible, and even stimulants; in regulated doses, may be resorted to with advantage.”—*Drs. J. Macrobain, and J. F. Ogilvie. Page 11, of the Report of the Lunatic Asylum of Aberdeen, for the year ending April 30th, 1845.*

§ 94. “Even in its most violent forms, the cerebral disorder is rarely to be cut short in its course by heroic remedies. In the case of some patients I have had reason to regret that the treatment before admission had been only too vigorous; and that, while *venesection had been prudently avoided*, and the abstraction of blood from the head only cautiously had recourse to, antimonials and purgatives had been administered with no sparing hand, and

the diet kept at too low a standard. * * * * The most certain result of active treatment, long continued, is prematurely to induce dementia."—*Dr. W. Mackinnon, in the Report of the Royal Edinburgh Lunatic Asylum, for the year 1844.*

§ 95. Of the continental authors, extracts will first be taken from those of France.

"The blood of maniacs is sometimes so lavishly spilled, and with so little discernment (discrimination,) as to render it doubtful whether the patient or his physician has the best claim to the appellation of madman. At the same time, I do not wish to be understood as altogether proscribing the use of the lancet in this formidable disorder; my intention is solely to deprecate its abuse.

Insanity consequent upon the suppression of periodical or habitual discharges of blood will doubtless frequently yield to an artificial evacuation of the same fluid, procured either by venesection or topically by leeches and cupping. A paroxysm of mania is sometimes preceded by symptoms of its approaches which cannot be mistaken; such as heightened complexion, wildness and prominence of the eyes, exuberant loquacity. In such cases the experience of hospitals authorises the free use of the lancet. It is a well established fact, that paroxysms of madness thus anticipated, are in many instances prevented by a copious bleeding. On the other hand, I feel it my duty to abstain from this practice after the explosion of a paroxysm of irregular periodical insanity. * * *

It frequently happens that bleeding, practised as it is, without rule or bounds, is found to exasperate the complaint, and to cause periodical and curable mania to degenerate into dementia or idiotism. In melancholia, whether simple or complicated with hypochondriasis, bleeding is still less to be recommended."—*Ph. Pinel,*

formerly Physician to Salpêtrière and Bicêtre, p. 251, of "A Treatise on Insanity," translated by D. D. Davis, M. D.

§ 96. "On the discovery of the circulation of the blood, it was believed that we had discovered the cause of every disorder, and a remedy for all ills. Blood was shed abundantly. The blood of the insane was the more freely shed, as, by bleeding them to faintness it was believed that they were cured. This treatment was extended to all the insane. In every hospital there was established what was called the treatment of the insane on this principle—that the blood being too abundant and too much heated ought to be evacuated and cooled. Besides, in the hospitals of France, where some attention was paid to the insane, in Spring and Autumn, they bled them once or twice and bathed them in cold water; or cast them bound hand and foot, into a river or reservoir. If a few victims of such gross mismanagement escaped, they cried out 'A miracle!' Such was the prejudice, not long since, even in Paris, in favor of bleeding, that we were accustomed to receive pregnant women, who were bled by way of precaution, before being sent to a house where bleeding was proscribed.

"Excess in this respect has sometimes been so great, that I have had in charge an insane man who had been bled *thirteen times in forty-eight hours*. Pinel set himself against this abuse, and cites examples which ought to be presented to the observation of all physicians. I can add, that I have often seen insanity increase after abundant menstrual flows, after hemorrhages, and after one, two or three bleedings. I have seen a state of sadness pass into mania and fury immediately after bleeding; and dementia to replace, reciprocally, the condition of mania.

"I do not believe it necessary to proscribe bloodletting in the treatment of insanity. It is indispensable in ple-

thoric subjects, when the head is strongly congested, and hemorrhages, or habitual sanguine evacuations have been suppressed. At the commencement of insanity, if there is plethora, if the blood rushes violently to the head, if some habitual hemorrhage is suppressed, we bleed largely, once, twice, or thrice; apply leeches to the jugular veins and temporal arteries, and cups to the base of the brain. At a later period, sanguine evacuations are local and employed as revulsives, or as supplementary to suppressed evacuations."

The foregoing extract is taken from the general essay on insanity, at the commencement of Esquirol's work on Mental Diseases, page 86 of the American Edition, translated by Dr. E. K. Hunt.

When treating specially upon Puerperal Insanity, he says, "Boerhaave and Van-Swieten inform us that blood-letting ought not to be employed, except in case of the utmost necessity, not even when the lochia are suppressed. By debilitating, say these authors, blood-letting injures rather than benefits the patients. * * * * * Bleedings,—and here Esquirol resumes the course of his own ideas—ought to be employed cautiously during the first stage. When the sanguine temperament predominates, and there are signs of plethora or congestion of the brain, leeches to the vulva or thighs are useful. Cups, vesicatories and sinapisms, applied to the legs, thighs or neck, in connection with a ptisan slightly sudorific or purgative, according to the tendency of nature, will be preferred to means called heroic."

Again, in the article on Lypemania, or Melancholia, we find the following remarks, "Pursuing the atrabile into the circulation, the humorists deduce from blood-letting a general precept against melancholy. Aretacus alone,

among the ancients, expressly forbids* it in the major part of cases. He permits it, however, only among young subjects, in the spring, and in small quantities. Cullen says that blood-letting is rarely useful. Pinel employs it very little. Nevertheless, we may have recourse to local sanguine evacuations,—at the epigastrium when the stomach is the seat of an active irritation, to the vulva when we wish to re-establish the menstrual flux; to the anus when we desire to renew a hemorrhoidal discharge, and, finally, to the head, when there are signs of cerebral congestion. I have sometimes applied leeches with success to the side of the head, when lypemaniacs complained of a fixed pain in the part. In the form of melancholy popularly called nervous, evacuants augment the evil.”

In a subsequent article upon mania, after mentioning the proper indications for bleeding, such as have already been quoted, he continues: “We must be cautious respecting sanguine evacuations. By enfeebling maniacs we run the risk of throwing them into dementia. ‘Bleeding,’ says Pinel, ‘is an unusual evacuation, and one which constitutes an epoch in the hospital for the insane, (Salpêtrière.) How numerous are the maniacs who have never lost blood, and been cured; how many have been bled, and still remain incurable!’ ”

§ 97. “Formerly, under the idea that mania depended upon a too active impulsion of blood towards the brain, because maniacs were perceived to have a hot head, face red and animated, and glistening eyes, it was recommended, in erroneously taking the effect for the cause, promptly to relieve the brain by repeated bleedings.....

* “Defends,” in Dr. Hunt’s translation, from which I quote, making this substitute. In the original, the word is *defend*, which signifies *to forbid*, as well as *to defend*. The French more frequently use it with the former signification, and the text shews that such was the meaning of Esquirol.

“But when we consider that mania generally depends upon an intense nervous exaltation which should be quickly moderated and controlled, in order to prevent the debility and atony that frequently result from it, we shall perceive how absurd it is, and how fatal it may prove, to provoke this condition by debilitating means.

“What is the result, in a great majority of cases, of enfeebling, of attenuating the maniac by repeated bleeding, and by rigorous diet? It is that he falls into stupidity, and the mania, which would have terminated happily in running through its periods with regularity, assumes a chronic or periodic character, rendering it often incurable, or it degenerates into dementia or idiotism.

“It is especially to the nervous system that therapeutic means should be directed. It is not necessary, hence, to conclude that bleeding should be absolutely excluded from the treatment of mania; but it should be practised with discrimination. It is principally necessary when the patient is young, vigorous, and plethoric, and particularly when the mania depends upon the suppression of an habitual hemorrhage, the menses, or hemorrhoids. In the last two cases local bleeding is often preferable.”

—*J. R. Jacquelin—Dubuisson, M. D., pp. 234-5 of “Des Vésanies, ou Maladies Mentales.” Paris. 1816.*

§ 98. “One would think that in diminishing the mass of the blood the congestion and the explosions of delirium would soon be subdued, and that in repeating the sanguine evacuations, many times, the insane person would be calmed and cured. This reasoning, which for a long time kept bleeding in mania in vogue, is in direct opposition to the results of an impartial observation. It is now acknowledged that, in the period of maniacal excitement, bloodletting augments the fury, increases the delirium, and afterwards renders convalescence difficult, and often

impossible. This is a fact, to the truth of which we have been forced by large experience; and its physiological explanation ought singularly to modify the opinions still prevalent in the schools, in regard to the nature of inflammation and irritation. This result appears to demonstrate that, in all sanguine congestions, it is not the blood alone, or, at least, its coloring matter, which furnishes the active element of irritation in the brain, as in other organs, but that it is in the serous portion that there is a peculiar decomposition which constitutes the true cause of irritation.

“Bosquillon, physician to the Hôtel Dieu, was a fanatic partizan of bleeding. All his treatment consisted in bloodletting, so copious and repeated, that they were not stopped until the patient was *exsanguinated*. This method became so fixed and dominant an idea with him, that his want of success, far from enlightening him, only forced him more obstinately into his fatal practice, all the evils of which, according to him, were owing to the patients, or the nurses.

“Venesection is now a rare occurrence, at Salpêtrère, and is prescribed only to indications which are accidental, and do not belong to insanity.”—*Scipion Pinel*, pp. 94-96 of “*Traité Complet-du Régime Sanitaire des Aliénés*. Paris. 1836.

§ 99. We have but one authority from Belgium.

“I rarely resort to depletion in mania. At our establishments, in a population of five hundred patients, I do not have recourse to general bleeding once in five years.

A have seen in cases of mania, very free discharges by epistaxis, which did not in the least mitigate the symptoms. I have seen maniacal women almost exhausted by metrorrhagia, without any melioration of their insanity. I remember cases of very considerable hemorrhage,

caused by wounds in the head, which produced no change in the mental condition. I have many times witnessed deplorable results, after repeated sanguine depletions, more or less abundant. I have observed that the moral excitability of patients becomes more intense after they have been bled; I have found the face pale, the pulse small, and the pupils dilated. I have interrogated a large number of maniacs in regard to their feelings subsequent to venesection, and many have said 'From the time when I was bled I neither knew what I did nor what was passing around me. After the loss of blood, I was wholly bewildered.'

"The phenomena indicating general bleeding are, a pulse full, tense, and more than normally frequent, beating of the carotids, injection of the conjunctiva, general swelling of the face, intense heat of the scalp, and oppression of the thorax.

"The fact must never be lost sight of, that, notwithstanding the great exaltation of the cerebral activity, it does not follow that there is inflammation. A state of feebleness may produce these phenomena. It must not be forgotten that the fundamental symptoms of insanity are such as announce a lesion of the nervous system."—*J. Guislain, Professor in the University of Gand, (Ghent) Vol. 3, p. 154 et seq. of "Leçons Orales sur les Phrénopathies."* Gand, 1852.

Guislain approves of local more frequently than general bleeding, yet he states that in the course of a year, with five hundred patients, the only depletion of this kind, prescribed to symptoms allied with the mental disorders, was that which was effected by the application of thirty-two leeches. The same author, in the second volume of his "*Traité sur l'Aliénation Mentale, et sur les Hospices des Aliénés*", published in Amsterdam, 1826, devotes

forty pages to the purpose of "demonstrating that the exaltation of the sanguineous system sometimes requires, in mania, the use of sanguine depletions, but that in the same disease, tonics and excitants are not less usefully indicated." p. 81. His prolonged and extensive experience since the publication of this work, appears not only to have confirmed his opinions in regard to the tonic and stimulant treatment, but to have diminished the relative proportion of cases in which he believes the abstraction of blood to be useful.

§ 100. Upon referring to German writers, we find that, at the commencement of the present century, the distinguished medical philosopher Dr. Reil, asserts in his *Rhapsodien ueber die Anwendung der psychischen Kurmethode*, p. 430, that "the often erroneous and superfluous treatment, which wholly destroys the natural powers through which a crisis might still have been effected," is one of the causes of so many imbeciles as the sequelæ of insanity. He who is acquainted with practical medicine in Germany, well knows that much of this "erroneous and superfluous treatment" consists in venesection. Dr. F. Nasse, one of the most celebrated of Prussian medical writers, condemns bleeding, but I have not been able to procure a copy of his works.

"Bloodletting and the douche, which are very extensively used in private practice without particular regard to the case, are here employed with great caution. In relation to the first, it is not to be overlooked that it is but rarely that inflammation lies at the ground of mental diseases; that, much more frequently, the excitement, by a too free use of debilitating agents, gives place, as in nervous fevers, to a sinking of the forces, and that, too, even from the cause, since debility, much oftener than is supposed, lies at the ground of the excitement; that an untimely bleeding, in patients hitherto quiet, may produce

the most severe attack of mania, and rapidly lead to dementia; and that irregularities in the circulation of the blood, which have been slow in their growth, as is generally the case in insanity, are not removed, but can only be increased by heroic treatment.

“It is true, there are many cases in which inflammatory excitement of the brain, or of some other organ, is evidently the basis of the psychical violence, and that a neglect of copious bloodletting, even in the earliest days of the disease, may result in incurable organic lesions, particularly of the brain. But even here, as in similar conditions in nervous fever, the necessarily following debility must never be lost sight of, and often much more good and far less injury can be done by topical bleeding, with leeches or cups, and by local revulsives, at a distance from the head.”—*Bericht ueber die Wirksamkeit der Heilanstalt Winnenthal, von ihrer Eroeffnung, den 1 Maerz, 1834. bis zum 28 Februar, 1837, von Hofrath Dr. Zeller, Direktor der Heilanstalt.*

“—the thousand-fold experience that a debilitating treatment, especially bloodletting, frequently, in a short time converts melancholia into mania.”

“In latter times, the idea of irritation has taken place of that of inflammation, because the delusion of seeking the cause of all mental disorders in the blood and blood-vessels, has been gradually perceived. This has, at least—and for the first time—gained thus much,—it has checked the insane bloodshedding of earlier times.”—*Ibid. Report for 1837—40.*

“As, in decidedly the greater part of cases, the hyperemia of the brain is of a passive nature, arising from a want of energy in that organ, it is evident that enormous mistakes are made, in treating insanity by venesection. We have recently had evidence of this in numerous cases,

in which general bloodletting quickly converted melancholia into violent mania or dementia."—*Ibid. Report for 1843-46.*

§ 101. "From such copious, I might say, once for all, such entirely irrational bloodletting as, according to some of the histories of cases which I have received, is practised in the country, I have seen the most sorrowful results. Incurable dementia and stupidity have been produced by it. I have cause, therefore, to warn against such gross professional mistakes. It is true, that in many of the ancient authors, and in old reports of cases, we read of the great use of venesection in former times; but even Hippocrates cautions us against it, under certain circumstances, and perhaps those authors, like many others, wrote only from hearsay. Yet, our contemporary physicians and surgeons do not consider, if we may judge by their profuse bleedings at the bedside of the insane, that the time is past in which physicians had to deal with constitutions unvitiated, in persons more robust, living for the greater part if not wholly upon vegetable diet, and educated to a more natural course of life. * * * * I know a case in which, from a patient in South Tyrol, ten pounds of blood were drawn off in one day. The patient is still in my institution, in a state of apathy." *Beschreibung der kaiserlichen Koeniglichen Provinzial Irren-Heilanstalt zu Hall, in Tyrol. Herausgegeben von Johann Tschallener, Direktor und Primararzte dieser Anstalt. Innsbruck. 1842.*

§ 102. "Hardly any remedy has been more abused than venesection. * * * * Because, in cerebral inflammation, there is a manifestation of mental excitement, does it, therefore, necessarily follow, that all mental excitement arises from inflammation? * * * Experience has

demonstrated that *anaemia and plethora, in their extremes, produce the same local symptoms, and that a deficiency of innervation—even in an exhausted condition of the system—may give rise to increased muscular action, both spasmodic and voluntary.*

“ ‘Madness is not in the blood,’ says the proverb, *** but it rests upon a disturbance of the central organ of the nervous system. That organ, for its nourishment and support, requires, of all things especially the blood, and always so much the more, the more those functions are in a condition of exalted activity. And when these functions depend upon the condition of the blood, as we have already shown, they cannot be rectified by adding to the *deficient quality* of the blood a *deficiency of its quantity*, thereby removing the most nutritious ingredient.

“ We cannot restore to an excitable man his psychical energy by drawing blood, and by obtunding the mental activity by rigid diet, but it may be done by taking from him the irritation which supports the excitability, and by strengthening the whole system, thus restoring the equilibrium of action of all the organs. Although the physician to the insane has daily proofs that general blood-letting and an antiphlogistic treatment exhaust the organ of the mind, yet those methods of treatment are daily repeated, thus, often preparing pain for him when it falls to his lot to (endeavor to) overcome, not only the weakness of the patient, but also—and often, alas! in vain—the weakness of the art.

“ It is not to be understood that we would entirely banish venesection from the treatment of insanity, but that we wish only to give warning against its abuse. As the innervation of the organs necessary to life issues from the brain and the spinal cord, it follows, that the weakening of these, necessarily induces debility of the whole sys-

tem. But insanity is not produced by an inflammation of them. So, by diminishing the quantity of the blood neither is its quality improved, nor is the disease itself removed. On the contrary, the already suffering powers of vitality must still further diminish, and through this, the brain approximate a condition of paralysis.

“Only in cases of insanity associated with, or accompanied by, other abnormal conditions, as, for example, strong determination of blood to the head, in vigorous persons, or inflammation of individual organs, should we venture to practice venesection,—and then, even, unwillingly, and in much less quantity than under other circumstances.

“It is true that insanity, as in all abnormal conditions of the nervous system, slight causes are sufficient to produce a strong determination of blood to the brain, and in the periodicity of this evil lies the organic condition thereto. The evil must be met, because it increases the abnormal condition, and may, by long continuance, produce organic lesions. But it often yields to leeching, or the revulsion of the blood towards other organs.”—*Ueber Irrsein und Irrenanstalten, für Aerzte und Laien. Von Dr. Heinrich Lachr. Halle. 1852.*

§ 103. When, in insanity, there is a local affection of the brain producing a secondary irritation, “in consequence of which plastic abnormalities are found, and become the proximate cause of idiocy—this, the moment when much may be effected towards a cure by means of bloodletting, partly general, partly local—which is never indicated in mania itself, but only in the hyperemia indicated by it. The value of this remedy was formerly estimated too highly, while, latterly, it has been too much depreciated.—*Baron Ernst von Feuchtersleben, p. 353 of The Principles of Medical Psychology. London Edition.*

§ 104. "Dr. Muller, of Wurtzburg, has rarely seen satisfactory effects from bleeding; not even in maniacal fury. 'The majority of patients,' says he, 'who arrive at my asylum, have been copiously bled, and in the larger number of them dementia has become the sad result.'"—*Cruisain, Traité de l'Aliénation Mentale, vol. 2, p. 92.*

§ 105. Dr. Engelken, of Bremen, published an article upon the use of opium in insanity, in the third number of the volume for 1851, of the *Algemeine Zeitschrift fur Psychiatrie*. In that Essay he remarks that bleeding, although it has been "useful at certain epochs, has now become fatal in the majority of cases of insanity, while opium has become more in relation with the convulsive erethism so common in our times."

§ 106. "The abuse of too frequent bleeding has been perceived by Dr. Jacobi, as by all the physicians to the insane that I have seen. All complain of the deplorable condition in which the patients from the provinces are sent to them. They are often exhausted by this antirational therapeutic treatment."—*Dr. Ferrus, in an article on Mental Pathology, in Belgium, Holland and Germany. Annales Medico-Psychologiques, vol. 6, p. 197.*

§ 107. "Heroic treatment often subdues mania, melancholia, &c., but at the same time plunges the patient into incurable dementia, as I have seen in some of the imbeciles admitted here, who had been actively treated by large bleedings, emetics, laxatives, calomel, &c.

"Venesection, that potent palliative in the orgasmus of the blood, has not, in the management of the insane, that distinguished advantage which we so frequently perceive from it in the diseases of the sane. The maniac is not unfrequently more furious after bloodletting, although the

frequent, full, hard and strong pulse, the flushed face, the heat of the head, the strong beating of the carotids, and the whole bodily constitution, indicated the treatment. These symptoms of orgasmus and plethora are often only signs of the high mental excitement and the physical exertions of the patient, and, therefore, perhaps more frequently the effect than the cause of this fury. In the insane with pallid face, cool head, lax constitution, and frequent, small and contracted pulse, bloodletting is useless, if not injurious, how great soever may be the exaltation of the patient, or however severe the paroxysm.

“I hold bloodletting as especially necessary in highly excited insane females, after the cessation of the menses. The blood should be taken from the foot, once or twice annually. Even this rule has its exceptions. By physicians and surgeons inexperienced in the treatment of the insane, venesection is driven to the extent of a lamentable and certainly often injurious abuse.”—*Dr. Schnieber, Superintendent of the Asylum at Sorau, Prussia; in an article in the Allgemeine Zeitschrift für Psychiatrie.*

§ 108. The following authorities were obtained orally in 1849, at the several institutions mentioned.

“Venesection is generally injurious;—physicians in the country practise it extensively, and to the injury of their patients. Local bleeding is practised occasionally on the nape of the neck, and sometimes, though rarely, upon the shaven scalp.”—*Dr. Focke, Siegburg Asylum, Rhenish Prussia.*

§ 109. “Bloodletting in the usual forms of insanity is not practised here.”—*Dr.——, Second Physician at the charity Hospital, Berlin, Prussia.*

§ 110. “Venesection is not practised. There is no indication for it excepting in apoplexy. Local bloodletting is rarely prescribed.”—*Dr. Klotz, Sonnenstein Asylum, at Pirna, Kingdom of Saxony.*

§ 111. "Venesection is never practised in the ordinary forms of insanity. Sometimes leeches are applied to the temples, or behind the ears.—*Dr. Ludwig Snell, Eberbach (now Eichberg) Asylum, Duchy of Nassau.*

More than thirty years ago, the physicians of Eberbach complained that many patients were not sent to the asylum until they had been exhausted by bleeding.

§ 112. "Venesection is never practised unless there be congestion, or some acute inflammation, such as pleurisy or pneumonia. In mania, general bleeding is liable to increase rather than to diminish excitability."—*Dr. C. F. W. Roller, Illenau Asylum, Grand Duchy of Baden.*

§ 113. "Venesection is rarely practised."—*Dr. Bergmann, Asylum at Hildesheim, Kingdom of Hanover.*

§ 114. "Venesection and local bleeding are sometimes prescribed."—*Dr. Varrentrapp, Asylum at Frankfort on the Maine.*

§ 115. "The work of Dr. Pignocco is the only Italian treatise upon insanity that has come under my notice since this article was commenced.

"Among the many injurious therapeutical means employed, often even without prudence, it is necessary to place the abuse of general bleeding, in the first rank.—The irritation, the tension, the spasm of the brain, or of the organs sympathetically affected by it, do not always indicate inflammation of that organ, nor threaten the congestion of it. Neither are the heat and the muscular agitation always signs of inflammation. That state is often convulsive and denotes merely a nervous excitement. Now, in this condition of the patient, always popularly attributed to inflammation of the brain, and threatened congestion, how injurious are the results of bleeding, often repeated." p. 80.

"How many cases of insanity attributed to the sup-

pression of habitual sanguineous discharges, and treated by reiterated venesection, have become incurable, or converted into epileptiform convulsions, dementia or other incurable maladies." . . . Venesection should be resorted to only when it is indicated by the urgency of the case, and after a proper understanding of the condition of the patient. We will not deny that, in some cases of insanity, this morbid condition is combined with plethora, and that, under such circumstances, the opening of a vein is required by sound practice: but it is folly to expect to calm the fury of the patient by bleeding. Venesection may have place, in the commencement of the disease, in plethoric and robust persons, in case of the suppression of some sanguine evacuations, and in patients menaced by cerebral inflammation or congestion. Under all other circumstances it is better to abstain from it than to resort to it." p. 82.

"We repeat, with Esquirol, 'do not deprive insanity of the power to rave,' if you do not wish it to fall into a chronic and often incurable state."—*Trattamento Morale dei Diversi Generi di Follia, e Cenni statistici dall Anno 1841 al 1849, raccolte nella Real Casa dei Matti di Palermo. Per Francisco Pignocco. Palermo, 1850.*

§ 116. Induced principally by the belief that, from the very essentially augmented attention which has been devoted to mental alienation during the last half-century, the opinions of modern authors are of paramount value, I have not considered it important to quote from those of a more ancient date. It is a singular fact that the treat-

ment of insanity as recommended by Coelius Aurelianus, in the first century of the Christian era, more nearly corresponds with that which prevails at the present time, in the public institutions of both Europe and America, than that of any other writer by whom he was succeeded during the somewhat extended period of seventeen hundred years. He condemned chains, the whip, and all perturbing medical means, and advised against prolonged abstemiousness, from the danger of debility. He recommended bleeding *if the strength of the patient would justify it*, and, in some cases, leeching and cupping.

Asclepiades asserted that bleeding is equivalent to murder, but allowed it in some cases. Valsalva and Morgagni appear to have approved of blood-letting less frequently than some of their predecessors.

§ 117. A large proportion, however, of the old writers, as Hippocrates, Galen, Paulus Aeginetus, Avicenna, Celsus, Hildanus, Plater, Sennertius, Sydenham, Highmore, Baglivi, Mead, Cullen, &c., advocated a free use of the lancet. Some of them also recommended the actual cautery, trephining, blood taken from behind the ears of an ass, and various disgusting and filthy substances, as remedies. If we repose upon their authority in the first instance, why not in all the rest?

§ 118. The modern authorities for a more frequent resort to depletion from the sanguineous system will now claim our attention.

“Where the patient is strong, and of a plethoric habit, and where the disorder has not been of long continuance, bleeding has been found of considerable ad-

vantage, and, as far as I have yet observed, is the most beneficial remedy that has been employed. The melancholic cases have been equally relieved with the maniacal by this mode of treatment. Venesection by the arm, is however, inferior in its good effects to blood taken from the head by cupping." He shaves the head and applies the cups to the scalp. "When the raving paroxysm has continued for a considerable time, and the scalp has become unusually flaccid, or where a stupid state has succeeded to violence of considerable duration, no benefit has been derived from bleeding. Indeed, these states are generally attended by a degree of bodily weakness sufficient to prohibit such practice, independently of other considerations."—*John Haslam, M. R. C. S., pp. 313–14 of "Observations on Madness and Melancholy."* London, 1809.

§ 119. "The lancet has been found a very communicative sort of instrument, not by a disclosure of much information with respect to insanity, but, in as much as it has tended to invalidate the claim of phrenitis to the consideration of being the general cause of mania." But still, "the utility of venesection, at a suitable period, is acknowledged; and the propriety of adopting it is further sanctioned by the following extract from Burdin's Medical Studies. 'Warm seasons have a striking influence upon the return of the paroxysm in mania.' So, as the author remarks in a note: "The curable patients in the Bethlem Hospital are regularly bled about the commencement of June, and the latter end of July."

"As noisy and riotous mad persons are more subject to apoplectic and epileptic attacks, the medical attendant will duly appreciate the advantages of phlebotomy, especially to such who are of apoplectic make. Professor Pinel mentions that out of fourteen patients who died at Charenton, ten were carried off by apoplexy."

"I have bled one hundred and fifty patients at one time, and have never found it requisite to adopt any other means of security against hemorrhage than that of sending back the patient to his accustomed confinement; not a single instance can be adduced of deleterious consequences from the occurrence of a fresh bleeding. The hazard of bleeding is very great; but let the operator direct the blade of the lancet by his fore-finger and thumb, and open the vein horizontally, and he will avoid all danger of doing mischief. The most violent I have been obliged to place on the floor, and then secure them by assistants, and place myself in a like situation, in order to perform the operation without danger."—*Bryan Crowther, M. R. C. S. Surgeon to Bridewell and Bethlem Hospitals, pp. 102 et seq. of "Practical Remarks on Insanity." London, 1811.*

§ 120. "Patients (at Bethlem) are ordered to be bled about the latter end of May, or beginning of June, according to the weather. After they have been bled, they take vomits once a week, for a certain number of weeks; after that we purge them."—*Dr. F. Monro, p. 95 of "Minutes of Evidence taken before the Select Committee (of the House of Commons) appointed to consider of provision being made for the better regulation of Mad-houses in England." 1815.*

§ 121. "The period of physicking continues from the middle of May, regulated by the season, to the latter end of September. Two bleedings, according to discretion, half-a-dozen emetics, if there should be no impediment to their exhibition; and the remainder of the time, until Michaelmas, a cathartic once a week."—*Haslam, p. 63 of Minutes of Evidence, &c.*

§ 122. "Our means of cure may be briefly enumerated; they consist of occasional cupping or bleeding, of the use of issues or setons, of continued purgation, of

nauseating medicines; finally, of the class of sudorific or refrigerant medicines. To this last mentioned class of remedies we attach, however, very secondary importance." In the early part of the disease "the pulse, if it be not more frequent than in health, is quicker in each individual beat. There is disproportionate action between the carotids and the radial artery. In such a state of the disease, venesection or cupping will often produce evident temporary excitement, perhaps amounting to a paroxysm. Often, during the remitting stage, bleeding has evidently occasioned headache, where headache has been the only phenomenon wanting to complete a set of symptoms usually coexistent.

"On bleeding, the pulse at the wrist will often become fuller than before, while that of the carotids is rendered less active.

"On the question of depletion during the paroxysm, there are contra-indicants to be considered. The patient is in danger from exhaustion. Depletion has a direct effect in weakening him, an indirect effect in preventing his weakness by lessening excitation. These views are important, and render it very difficult to seize the point to which depletion may be carried during the paroxysm."

"With a plethoric habit, its direct utility in promoting menstruation is allowed; but where the habit is not plethoric we seem liable to cause a dangerous substitution of bleeding for the act of nature. Yet we go so far as, in many cases, to order a plentiful bleeding a short time before menstruation is to take place—contemplating the temporary excitation attendant on that process.

"On this head I have to observe, first, that we have never witnessed an interruption of the catamenia traceable to bleeding; secondly, that *we should not consider the occasional occurrence of such a phenomenon as worthy to be weighed against the general importance of bleeding.*

“ There is no form of the disease in which the depletory treatment assumes so much importance as in puerperal mania. There, it seems to exert great efficacy as a preventive, as well as in the cure. The effects of warm and strong maternal feelings, as increasing liability to disease, is well known. It has been observed to us by an eminent accoucheur, that wherever, in a person of such feelings, he should be inclined on general grounds to take away any given quantity of blood, he should be induced, by observing this state of feelings, largely to increase the quantity.”—*Thomas Mayo, B. M., in “Remarks on Insanity; founded on the Practice of John Mayo, M. D.” London, 1817.*

§ 123. “I am very far from approving or wishing to recommend such detractions of blood as those which appear to have been practised by Dr. Rush; but I have been convinced by the evidence of numerous facts, that bleeding, both local and general, is, under due limitations, serviceable in cases of insanity. **** The circumstances which render bleeding most advisable are those which indicate an approach in the disease to the character of phrenitis. The age and constitution of the patient must be taken into the account. If young and plethoric, he will more easily bear depletion; if the attack has been acute and sudden, it will more decidedly require it. If the vessels, especially the carotids and temporal arteries, pulsate strongly and rapidly, and there is heat of the skin, and principally of the head, much redness of the face and conjunctiva, a contracted pupil, intolerance of light and of sounds, total want of sleep and much agitation, symptoms of disordered sensation, as spectral appearances, in such cases bleeding from the arm will be practised beneficially; and it should be done before excitement shall have produced collapse and exhaustion. The

abstraction of twelve or sixteen ounces of blood under the circumstances above described, is often followed by a mitigation of all the symptoms. It may be repeated with advantage if the good effect is only temporary, or may be followed, if this be incomplete, by the use of cupping-glasses, or leeches, applied to the head."—*On Insanity and other Disorders affecting the Mind. By James Cowles Pritchard, M. D., F. R. S. Philadelphia Edition, 1837. p. 190 et seq.*

Pritchard approves also of bleeding in cases following the suppression of the menses, or some morbid discharges, or the disappearance of eruptions, erysipelas or dropical effusions, if "the arterial circulation and the heat of the skin be considerable;"——but he has "*seen mischievous results from bleeding in cases of madness which followed the disappearance of eruptions*, when the vigor and excitement of the arterial system were not sufficient to support the consequent collapse."

"Insanity occasioned by blows or injuries of the head, as well as madness resulting from intoxication, is relieved by bleeding;—but care must be taken to distinguish insanity the effect of intoxicating liquors or of blows on the head from delirium tremens, and from that species of delirium so much resembling it, which is occasioned by wounds. I know that patients laboring under delirium tremens have been killed almost instantaneously by practitioners who were unaware of the nature of such cases." * * * In traumatic delirium "bleeding is highly dangerous, and the appropriate remedies are stimulants, and frequently opiates."

"Mania is the form of insanity which most frequently requires abstraction of blood; but I have in many instances found a decided benefit to arise in cases of melanancholia from one or two moderate bleedings, either gen-

eral or local. 'This has been the fact in cases accompanied with head-ache or a feeling of oppression referred to the head, with a full state of the bloodvessels, and generally with confined bowels.'—*Pritchard*.

§ 124. "First, of Bleeding. This remedy is one of extreme value, and, in its use, we must be governed by the same general principles which guide us in the treatment of the sane. * * * Large abstractions of blood are injurious, unless justified by inflammation of an organ. Cupping is preferable to leeches, because you know your quantity. * * * As far as individual experience justifies an opinion, I cannot help thinking—such being the principle upon which I establish my treatment—that, *in all cases* where an accustomed evacuation or secretion suddenly ceases, and, as almost always happens—particularly among the insane—symptoms of unequal circulation arise, bleeding is not only eminently useful to prevent future evil, but it has this further recommendation, that we possess no agent capable in the same time, and with certainty, of producing similar effects."—*John Burdett Steward, M. D. F. R. C. P. pp. 52-4 of "Practical Notes on Insanity." London. 1845.*

§ 125. "I have only seen a few patients in the early, excited stages of insanity, and have generally bled them, without observing any permanent effect. I should bleed patients again in the same circumstances, and others would do the same on principles of analogy; but it is clear that we are acting in considerable uncertainty where the life and reason of men are at stake."—*On the Statistics of English Lunatic Asylums, and the Reform of their Public Management. By William Farr. Vide p. 16.*

§ 126. "Mania and monomania, in all their forms, are more frequently the results of a cerebral state characterized by increased vascular action, than any other, and it

then admits of active and successful treatment, particularly in its early stages. It is in such circumstances that, in young and robust subjects, bloodletting is often very beneficial. ** I have seen the very best effects follow cupping and then leeching, where great restlessness, accompanied with fulness and redness of the integuments, and other unequivocal signs of vascular excitement, were present.

“I have seldom had occasion to see or recommend general bloodletting in pure insanity: but I have observed more decided benefit from repeated and free local bloodletting than from any other means, and therefore consider it, taken in conjunction with a suitable regimen, and the use of other auxiliaries, as an extremely valuable remedy in the particular class of cases to which it is adapted, viz., those of vascular excitement. But, as Cox justly remarks, as fury, violence, and rage may equally characterize an opposite description of cases, and the pulse afford us little information, we must be careful to seek for other than mental signs to guide our judgment. It is, indeed, often very difficult to draw a true line of distinction between them and then we must be equally cautious in our practice. But when we see manifest symptoms of general plethora in young, robust, and sanguine subjects, or in females at a critical period, or in those who have lived fully and taken little exercise, or had some customary discharge suppressed, or, in short, been exposed to some cause productive of fulness, if we do not resort to depletion and evacuations, we not only diminish the chance of recovery, but have the patient exposed to the risk of apoplexy, or organic or incurable disease.”
—*Andrew Combe, M. D., pp. 326 et seq. of “Observations on Mental Derangement.” London. 1831.*

§ 127. “Regulators, sedatives and calmants. I do

not hesitate to place bleeding, when it is judiciously practiced, at the head of this class of remedies. * * * If the patient be young and plethoric, or very vigorous, although advanced in age, accustomed to substantial nutriment and to strong liquors; if the pulse be full and bounding; if the chest, the neck and the face be swollen and extremely red; if the eyes be protruding and injected, and all parts of the body preternaturally hot; if an access of mania or of extraordinary hebetude appear under these circumstances, and particularly if it be after the suppression of an ordinary hemorrhage, or an habitual bleeding, or after the abundant use of wine, or of alcoholic liquors; it is certain that, under these diverse circumstances we should not hesitate to bleed, even copiously, inasmuch as it is known that mediocre bleeding is generally useless. Much more will it be necessary to bleed if there are symptoms of meningitis, if there be a disposition to apoplexy, and when in plethoric temperaments, mania is complicated with epilepsy.

“Bleeding will be dangerous in feeble and lymphatic persons, or those who have already been weakened by the disease and by its treatment, in melancholy characterised by extreme depression, in a paroxysm of mania supervening upon idiotcy, and in the course of a periodical access which appears to be critical.

“There are few insane, particularly in hospitals, upon whom it has not been largely practiced, although often not only without success, but even with great detriment. It is but too true that frequently *a mere aberration of the forces*, may be mistaken for real augmentation of those forces, and that sufficient attention has not been paid to the convulsive efforts of many feeble persons, even those at the point of death, who with a countenance momentarily animated, often execute movements which the

force of several persons can hardly restrain, and who, it is very certain, would immediately die if they were bled."—*F. E. Fodère*, p. 308, *et seq.*, of his "*Traité du Délire*." Paris; 1817.

§ 123. "Insanity is an irritation. We have, then, two general orders of modifiers with which to combat it, sedatives and counter-irritants, called also, and even most frequently, revulsives. If we suppose the disease at its commencement, and at its higher degree, we shall find it with the symptoms of inflammatory irritation. It will be an encephalitis that we shall have to oppose, we should, then, attack it with blood-letting, abstinence, emollient drinks and the application of cold. Profuse bleeding has been too much declaimed against since the days of Pinel, and his school has been too parsimonious of the blood of the insane. Hence they do not report a single case of sudden cure, while the physiological physicians can cite a large number of cases in which bleeding, and particularly leeches, repeated for three, four, or five days consecutively, have removed commencing insanity, as a commencing peripneumonia or gastro-enteritis is removed, and suddenly restored the patients to reason.

"After bleeding from the large vessels come the capillary bleedings.—Leeches, cupping upon the course of the jugulars, upon the head—which should be shaved at the base of the cranium, below the occiput, in every region where the heat is too great, or where there is pain, even in places where the skin is alone painful, and finally upon the nucha and between the shoulders, according to the method of Coelius Aurelianus, are means of great effect.

"At the same time copious bleeding is not always without danger in delirium with convulsive agitation. I

have often seen, in the ancient practice, men attacked with febrile acute delirium, with convulsive trembling, the sequel to excess of alcoholic liquors, die suddenly a few hours after being bled. I collected five or six such cases, in a very short time, in the clinique of Corvisart, who had not adopted the system and the nomenclature of Pinel."—*F. J. V. Broussais*, pp. 512-14 of "*De l' Irritation et de la Folie.*" Paris, 1828.

§ 129. "In the greater number of the cases of recent insanity which I have treated, I have employed bleeding, local or general, rare or frequent, abundant or mediocre, according to the forces of the patient and the state of the pulse, the injection of the conjunctivæ, the heat of the head, the agitation and insomnolence. I have always preferred general bleeding when there were signs of plethora or when the force and the frequency of the pulse were developed. In opposite circumstances, leeches to the neck, the temples, behind the ears, cut cups to the same parts, or upon the shaven head, have produced marked advantages.

"Local bleeding having appeared to me to have produced a very marked effect upon the brain, I have often prescribed it in connection with general bleeding, in cases where the intensity of the general symptoms seemed imperiously to call for the latter. But I have never reposed exclusively upon the effects of sanguine evacuations, although in many cases, I have seen all the accidents (symptoms?) disappear, as by enchantment, after their employment.

"I have several patients who, for many years, have been subject to paroxysms of recurrent mania which, if left to nature, continued three or four months, or more. During the three years that I have had charge of them, they have not had a single paroxysm that lasted a month.

The symptoms have often been dissipated in five or six days. General or local bleeding, according to the intensity of the symptoms, and *tepid baths with cold applications to the head at the same time*, are the means by which I have almost invariably shortened or abolished the paroxysm.”—*A. Foville, formerly Physician in Chief to St. Yon, Rouen. p. 569-70 of vol. 1. of the Dictionnaire de Médecine et de Chirurgie Pratiques.* Paris. 1829.

Foville bases his treatment upon the inferences drawn from pathological appearances in his own necroscopical investigations. “In several hundred insane patients whose bodies have been examined,” says he, “I have never found adhesions (in the brain) in acute cases, while they are very common in chronic cases,” p. 567.

§ 130. “Bleeding has been abused, yet we believe that sanguine emissions have been too rigorously proscribed. This means may be very useful, but to avoid its inconveniences, the following considerations should not be forgotten. 1. In nearly all cases of super-excitement and of cerebral congestion, sanguine depletion should be combined with refrigerant applications to the head, and the action of revulsive agents, if we would obtain prompt and durable effects. 2. Local is often preferable to general bleedings, either because they have a more direct action, or because they do not cause useless and superfluous loss of blood. 3. Local bleedings, properly managed, may be many times repeated without inconvenience, even in persons apparently very feeble.”—*Dr. Georget, p. 81-2 of “De la Folie, ou Aliénation Mentale.”* Paris. 1823.

§ 131. “We think, with MM. Foville and Ferrus, and the majority of physicians to the insane of our epoch, that it is altogether rational to employ both general and local bleeding in mania, since we have admitted that it

is produced by irritation or inflammation, and that blood-letting is the most potent of anti-phlogistics. Sanguine evacuations not only contribute to the cure of acute mania, but they are especially proper to prevent those organic alterations which induce incurable dementia.

"Thus, in the beginning of mania, we have often employed general bleeding, more or less frequently repeated; then we have prescribed leeches to the anus, and afterwards behind the ears, a greater or less number of times, according to the persistence of the mania and the constitution of the patient. We can report a large number of observations of maniacs who have been in a state of delirium and extreme fury for many months, but who have perfectly recovered, without relapse, and with whom we had recourse to general or local bleeding, frequently repeated."—*Alexander Botter, M. D. p. 15-16 of the "Rapport Statistique sur le Service des Aliénés de l'Hospice de l'Antiquaille."* Paris. 1839.

§ 132. "Mania sometimes assumes a form which approximates to that of inflammatory affections of the brain and its envelopes. In this case, the antiphlogistic method is indicated. Sanguine evacuations, by venesection, leeches and cupping are, then, of incontestible utility.

"The abstraction of blood is also often very proper to calm the accesses of agitation which occur in other forms of acute and chronic insanity. Sanguine evacuations, when proportionate, in quantity and frequency, to the constitution and the strength of the patient, have not the inconveniences of which they are too generally accused, of favoring the passage into dementia."—*Drs. L. Deboutville and M. Parchappe, Pages 96-97 of the Notice Statistique sur l'Asile des Aliénés de la Seine-Inférieure, (Maison de St. Yon, de Rouen) pour la période comprise entre le 11 Juillet, 1825, et le 31 Decembre, 1843.* Rouen. 1845.

§ 133. "I believe that there is too much parsimony of the blood of the insane since Pinel, who always feared that a few drops of blood would cause maniacs to fall into dementia. Because venesection has been abused, it is not necessary absolutely to abolish it. There are species of insanity in which sanguine emissions are injurious; but they are always useful in that (*paralysie générale*) of which it is here the question."—*Hubert Rodrigues, De la Paralysie Générale, p. 31. Paris. 1838.*

§ 134. "The functions of the brain may be deranged by too great a stimulus. I shall call that state of the brain hypersthenic; if, however, any nosologist prefer the term *inflammatory*, I shall never dispute about names. * * * * The inflammatory state of the brain is often without pain, and practitioners are then led into error, forget that the brain is not sensible, and differs, in this respect, from the nerves of the body. * * * Another common error is, to think that violent delirium and fury are the only signs of the inflammatory state of the brain. Inflammation may exist without such symptoms, and both symptoms may exist without an inflammatory state of the brain. * * * Numerous dissections have convinced me that inflammation of the brain is by no means infrequent. * * * The treatment of the hypersthenic state of the brain, whatever the symptoms of insanity may be, is the same, and may be termed lowering. Bleeding is the genuine remedy; opening the temporal artery, cupping at the temples, behind the ears, or on the neck, leeches to those parts, venesection at the arm—shaving the head, &c., &c. * * * in short, the whole antiphlogistic treatment.

"Another state of the brain, accompanied with its deranged functions, is the result of debility. I call it asthenic. * * To this state particularly is applicable the opinion of Pinel, that "bleeding, without rule or bounds,

often exasperates insanity, &c. Indeed, the lancet, has been frequently applied to insane people merely for the purpose of rendering them less noisy. I, however, do not wish to be understood as proscribing altogether the use of the lancet, even in this state of the brain; but it will be seldom necessary.

“A third state of the brain, in insanity from idiopathic causes, may be called *nervous*. It has many symptoms common with the second, but it is more dangerous. It exists in very irritable, delicate, and so called nervous temperaments. * * * The treatment of this state is not bleeding, purging or vomiting, but antispasmodics and tonics.” *J. G. Spurzheim, M. D., pp. 286 et seq. of “Observations on the Deranged Manifestations of the Mind, or Insanity.” London, 1817.*

§ 135. Perhaps no physician of enlarged experience in the treatment of insanity, has more frequently practiced the abstraction of blood, and generally with the lancet, than Dr. Perfect. In his “*Annals of Insanity*” he has reported a large number of cases in the treatment of which this agent acts a very conspicuous part. Dr. Joseph Frank, an eminent German Physician, also advocated the liberal abstraction of blood. Excepting Spurzheim, I have met with no authority sustaining him, among those of his countrymen who have written upon the subject.

§ 136. The only remaining authority to be quoted is that of Dr. Rush. As comments upon this are considered necessary, they are made, for the sake of brevity and convenience in the course of the extracts.

In Hypochondriasis or Tristimania. “Bloodletting, if the pulse be tense or full, or depressed, without either fullness or tension. I have prescribed this remedy with success, and thereby, in several instances, suddenly pre-

pared the way for its being cured in a few days by other medicine." p. 99.

Amenomania. "The physical remedies for this form of partial derangement are nearly the same as those which have been recommended for tristimania, particularly bleeding, purging, emetics, and low diet, in an excited state of the blood-vessels, and, after they are reduced, stimulating diet, drinks and medicines." p. 139.

Mania. "The first remedy under this head should be bleeding-letting. This evacuation is indicated,

First. By all the facts and arguments formerly mentioned in favor of this grade of madness being an arterial disease of great morbid excitement or inflammation of the brain, particularly by the state of the pulse, and, when this is natural, by the state of the countenance, by wakefulness, and by a noisy and talkative disposition." p. 185.

The "facts and arguments" here alluded to as proofs that mania is a disease of the blood are,

a. That *many* of its remote and exciting causes are such as induce fever, phrenitis, apoplexy, palsy and epilepsy.

b. Persons *most subject* to mania are at that period of life in which inflammatory diseases are most common, and their constitution is of "arterial predisposition."

c. The symptoms of the disease. "These are a sense of fullness and *sometimes* pain in the head; wakefulness, and a redness of the eyes, such as precede fever; a whitish tongue, a *dry* or *moist* skin, high colored urine, a *frequent, full*, or *tense* pulse, or a pulse morbidly *slow* or *natural* as to frequency."

d. It alternates with "consumption, rheumatism, intermitting and puerperal fever, and dropsy,—diseases which are evidently seated in the blood-vessels."

e. It blends "its symptoms with several of the forms of fever."

f. Blood withdrawn in mania resembles that taken in some of the fevers.

g. Post mortem appearances of the brain. They are, first, "*the absence of every sign of disease*," second, inflammation, effusions, extravasation and intravasation of blood and even pus, and "preternatural *hardness* and dryness; third, "preternatural *softness*," and fourth, "*sometimes* preternatural *enlargement* of the bones of the head, and sometimes preternatural *reduction of their thickness*."

h. The remedies which cure mania are "exactly the same as those which cure fever or disease in the blood vessels from other causes."

A few remarks upon these "facts and arguments may be permitted."

a. "*Many*" causes are not *all* the causes. But allowing this argument all the force which can possibly be claimed for it, bleeding as the treatment, is not, in these days, a necessary inference.

b. What shall be said of the no small number of persons who are not "*most subject*" to the disease, but, nevertheless have it, or of those who are *not* at the period of life, most prolific of inflammatory disorders, and those who have *not* the constitution of "arterial predisposition?"

c. The large majority of maniacs do not complain of any disagreeable sensation in the head; wakefulness is very frequent, though not invariable; redness of the eyes, and whiteness of the tongue, not sufficiently general to establish a rule. The other symptoms under this head will be noticed below.

d. The alternation mentioned is, in very rare instances, true, but it is begging the question to assume that the diseases named are "seated in the blood-vessels."

e. True in some cases, but very far from being generally so.

f. Having rarely practised venesection in mania, I am not prepared to judge in the matter from personal experience. The appearances which Dr. Rush mentions as identical in the two diseases are "inflammatory buff, yellow, serum, and lotura carniū." In support of his argument, he quotes from Haslam, that "of two hundred patients bled by the latter the blood was sīzy in but six cases;" and asserts that such was the fact, because the blood was "diseased beyond that grade in which it exhibits a buffy coat." This is altogether an assumption. Haslam draws no such inference, makes no such assertion, but merely mentions the fact, without explanation deduction or comment, of the number of cases in which the "sīzy" phenomenon was presented. Haslam and Crowther held the lancet with no sparing hand, and we learn how very rarely they *saw* any indications in the blood of the disease. Yet Rush asserts that in Mania, he has "*never*" seen "*a single instance in which it put on a natural appearance.*" Either his optics must have been remarkably acute in the detection of delicate shades of distinction, or his mind must not have been wholly emancipated from the natural tendency which so frequently, even unconsciously to the observer bends, and warps, and tortures "facts and appearances," for their proper adjustment to a preconceived theory.

g. Inflammation, and lesions generally considered to be its sequelae are often found in the encephalon of persons who have died of insanity, yet Pinel, the elder, a cotemporary of Rush, asserts that in 261 autopsies he found but sixty-eight, and Esquirol, in 277, but seventy-seven. Later observers, however, generally give larger proportion as the result of their researches. One

of them,* indeed, after having examined more than two hundred bodies, "has scarcely met with a single instance" in which there were not traces of encephalic disease. This is not a proper place to attempt to reconcile these differences. The authority of the last observer is adduced for the purpose of giving to the argument all the weight to which it is, by possibility, entitled. Undeniably, however, there are cases, of both recent and chronic mania, in which no pathological appearances of any importance are discoverable in the brain, after death. Dr. Rush acknowledges it; and it is worthy of observation, that the very first condition of the brain which he alleges as proof that mania is a disease of the bloodvessels, and therefore to be combated by venesection, is "*the absence of every sign of disease.*"

Here, as in other of the arguments, we are bound to admire the facility with which our author deduces an identity of treatment from the most diametrically opposite symptoms, conditions and phenomena. His logic simplified, is this. If the skin be *dry*, there is inflammation,—therefore bleed; if it be *moist*, inflammation, bleed; is the pulse *frequent*? It indicates inflammation; *ergo*, bleed; is it morbidly *slow*? Inflammation,—bleed; is it *tense*? Inflammation—bleed; *depressed*? (see treatment of Tristimania) inflammation,—bleed; *full*? Inflammation,—bleed; is it *NATURAL*? Inflammation,—bleed. Do you believe the cranium to be *thickened*? It is the effect of inflammation; you must, consequently, bleed. On the contrary, is its natural *thickness diminished*? evidently the result of inflammation,—bleed. Is the brain preternaturally *hard*? Inflammation—bleed; is it preternaturally *soft*? Inflammation—bleed; is there redness of its sub-

* Mr. Davidson, at Lancaster Asylum, England. See Combe's "Observations on Mental Derangement" p. 288.

stance,* effusion, extravasation or intravasation of blood, or purulent matter?—all are the sequelae of inflammation—hence you must bleed; and, finally, is there, in the brain “THE ABSENCE OF EVERY SIGN OF DISEASE?” how is it possible that there should not be inflammation? In the language of Broussais, “it is an encephalitis that we have to combat,”—therefore, BLEED! *Quod erat demonstrandum.*

These are not the only inconsistencies into which Dr. Rush was led. In several places he recommends or expresses approbation of certain forms of treatment which, in their very nature, are utterly at war with rational management, on the supposition of the truth of his hypothesis that the lesion is a profoundly diseased condition of the blood. In England, refractory horses are subdued by impounding them and “keeping them from lying down and sleeping.” Hence, although he has enumerated wakefulness among the signs of inflammation the indications for bleeding, and the conditions which endanger the delicate structure of the brain, he infers that “*the same advantages might be derived from keeping madmen in a standing posture, and awake, for four and twenty hours.*” Again, he was informed that in the interior of East India, “the wild elephants, when taken, are always tamed by depriving them of food until they discover signs of great emaciation.” *Therefore*, he is “*disposed to think favorably of fasting for two or three days in this form of madness.*” The principles of practice of the oracles in medicine deduced from the treatment of “refractory horses” and “wild elephants!” and this, too, while contending that the disease to be overcome in the human subject is an inflammation of the blood—a condition of that fluid so far removed from that

* Dr. Rush does not recognise the now well known fact that some of these post mortem appearances may be the effect of a passive, or asthenic inflammation,—Dr. Sutherland, § 22, says even of mere irritation—and can consequently only be aggravated by the abstraction of blood.

of health, that it is evident, upon inspection, even to the eye! Were there the first point of analogy between the *pathological* physical condition of a maniac, and the *normal* condition of a horse, or an elephant, the inference would be less preposterous; as it is, it is worthy of a Sganarelle.

h. Much of the fever of the present day, as was the spotted fever—*typhus petechialis*—of New England, in the time of Rush, is cured by stimulants. So mania, according to many authorities, (§§ 10, 14, 18, 43, 56, 70, &c.,) is now frequently, and very successfully treated by stimulants and tonics. Do these facts tend to prove that it is “essentially a disease of the blood vessels,” essentially inflammatory in its character?

We will now proceed with the other indications of Dr. Rush for bloodletting.

“Second. By the appetite being uninterrupted, and often unrestrained, whereby the blood vessels become overcharged with blood.”

Generally, so far as my observation has extended, in cases of acute mania, *with febrile symptoms*, the appetite is diminished, sometimes null. When, in these or other cases, it is “uninterrupted,” or “unrestrained,” digestion is usually good, and perhaps Dr. Laehr (§102) and many others would hence infer that nature thus endeavors to overcome the excitement, by giving tonic force to the brain through a wholesome supply of blood. It is true, however, that there are some patients who eat more than would appear best; but to permit these to gormandize, and then to endeavor to ward off the consequent evils of it by the abstraction of blood, betrays a degree of judgment and discretion corresponding with that of him who coolly ventures upon an epicurean debauch, with a pre-

determination of closing it with an emetic. Is it not simpler, safer and more prudent to restrict the insane man, in regard to the quantity of his food?

“Third. By the importance and delicate structure of the brain, which forbid its bearing violent morbid action for a length of time, without undergoing permanent obstruction or disorganization. The danger from this cause is much increased by the wakefulness, hallooing, and strong muscular exertions of persons in this state of madness.”

Violent morbid action, so far, at least, as the circulatory system is concerned, is now demonstrated to be the exception, and not the rule, in mania. Determination of blood to the brain may arise from a deficiency as well as from a redundance of blood, and the excitement which is manifested by shouting, and muscular action, is often the consequence of debility of the vital forces and not of their augmentation. §§ 18, 80, 82, 86, 92, 93, and others.

“Fourth. By there being no outlet from the brain, in common with other viscera, to receive the usual results of disease or inflammation, particularly the discharge of serum from the bloodvessels.”

“Are there not, as in the pleura and the peritoneum, the absorbents? If, in the autopsies of 538 bodies, Pinel and Esquirol found cerebral lesions in but 146, a considerable number of which, it may be inferred, were not effusions in greater quantity than the brain could tolerate, with safety, the necessity for more capacious outlets is not so great as to give the force of conviction to this argument. Again, if *passive* be mistaken for *active* inflammation, and the patient be bled, is not the danger of effusion thereby augmented?

“Fifth. By the accidental cures which have followed the loss of large quantities of blood. Many mad peo-

ple who have attempted to destroy themselves by cutting their throats, or otherwise opening large blood-vessels, have been cured by the profuse hemorrhages which have succeeded those acts. Of this, several instances have occurred within my knowledge."

Guislain on the contrary, § 99, asserts that he has witnessed profuse hemorrhages without the sequel of restoration; and Esquirol, § 96, has seen the disease augmented by the same cause. If general principles of therapeutics are to be derived from a small number of what may be termed accidental or incidental cures, the treatment of insanity will constitute a medley of absurdities incomparably more ludicrous than that which is recommended for other diseases, by some of the authors of olden time. A man who had previously been a patient at the Bloomingdale Asylum, shot himself in a third attempt at suicide, in such manner as to knock out two of his teeth. The shock cured him. Shall we, therefore, advise all the suicidal insane to demolish their teeth with the ball of a pistol?

"Sixth. By the morbid appearances of blood which has been drawn for the cure of this form of madness." This argument has already been sufficiently noticed.

"Seventh. Bloodletting is indicated by the extraordinary success which has attended its artificial use in the United States, and particularly in the Pennsylvania Hospital."

Since the treatise of Dr. Rush was written, experience in the United States in regard to this subject has increased probably an hundred fold, and the deductions therefrom may be learned by consulting the foregoing pages, from § 1 to § 21, inclusive. The department for the insane of the Pennsylvania Hospital has been isolated from that for general diseases, during the last thirteen

years. The average number of its patients has probably been four or five times as great as in the time of Rush. What might then have been the success of a practical adherence to the therapeutics of that author, cannot now be determined, except by inference. Its intelligent, judicious and successful superintendent, Dr. Kirkbride, in the early part of his career, took occasion, § 15, to caution physicians against pursuing "a course of treatment proper for inflammation of the brain," and there is good authority for the supposition that, in cases of mania unaccompanied by epilepsy, paralysis or apoplexy, or by some adventitious or incidental disease, he has never, during his management of that institution, practiced venesection.

Having demonstrated, satisfactorily to himself, the importance of treating mania invariably—for he admits of no exceptions—by venesection, Dr. Rush gives several rules agreeably to which it should be employed.

"1. It should be copious on the first attack of the disease. From twenty to forty ounces of blood may be taken at once, unless fainting be induced before that quantity be drawn. * * * It often prevents the necessity of using any other remedy, and sometimes it cures in a few hours."

If mania, as Rush endeavors so strenuously to prove, be seated "in the blood-vessels," and the blood be "generally diseased beyond that grade in which it exhibits a buffy coat," by what sort of legerdemain is the disease so suddenly removed, merely by the withdrawal of a portion, though actually large, yet relatively small, of the diseased blood? In what way does the remaining mass of diseased blood so quickly regain a healthy condition?

"2. It should be *continued* not only while any of those

states of morbid action in the pulse remain which require bleeding in other diseases, but in the absence of them all, provided great wakefulness, redness in the eyes, a ferocious countenance, and noisy and refractory behaviour continue."

The pernicious and deplorable effects of such copious and repeated abstraction of blood, have been sufficiently depicted by numerous authors quoted upon the preceding pages, §§ 7, 12, 22, 44, 49, 67, 75, 78, 83, 92, 96 and many others.

"6. The quantity of blood drawn should be greater than in any other organic disease. This is indicated not only by most of the reasons for bleeding formerly given, but by the *strong and uncommon hold which the disease takes of the brain*. Many circumstances prove this to be the case, but *none more than its not being cured, and scarcely suspended by the acute and painful disease of parturition*." He then quotes two from "many" cases of the success of profuse bleeding. In one of them, a man aged 68, he drew "nearly *two hundred ounces* of blood," in the course of fifty-six days; and in the other, when the practice was pursued by his "order," the patient lost almost *four hundred and seventy ounces*, at "forty-seven bleedings, between the months of June, 1810, and April, 1811."

It is now, I believe, a somewhat extensively prevalent opinion, that the existence of insanity is, of itself, an indication *against* bleeding, and that, when the physical symptoms require the abstraction of blood, the quantity should be less, *ceteris paribus*, from a maniac, than from a person in mental health, §§ 20, 42, 69, 78. The same reasons for abstinence from the use of the lancet in a large majority of cases, require caution and moderation when its employment is believed to be necessary.

The logic exposed by alleging the fact that the "acute

and painful disease of parturition," does not *cure* mania, as the most convincing proof of the tenacity with which the latter disease adheres to the brain, is not easily comprehended. Are the throes, the tortures, the anguish, bodily and sometimes mental, the temporary congestion of the brain, the excited circulation, the profound attack upon the nervous system, and, in the latter stages, the exhaustion, debility and prostration that accompany parturition, calculated to restore a diseased brain to its normal integrity? There is, indeed, a great reduction, temporarily, at least, of the vital forces, as well as the loss of a large quantity of blood;—and these appear to be the principles upon which the treatment pursued by Dr. Rush is based. Yet, in parturition, as he admits, they do not cure, they do not even "scarcely suspend" mania. On the contrary, it is known that they frequently produce it. What, then, becomes of this argument in favor of universal copious bleeding and other depressing agents in the treatment of this disease?

Although it be a large tax upon our credulity, yet it is not doubted that the patients who lost two hundred, and four hundred and seventy ounces of blood, respectively, recovered. Venesection has, undoubtedly, been practiced with much utility, in some cases. The question is not, shall we *never* bleed, but, shall we *always* bleed, and in such enormous, not to say outrageous, quantities? Nature, it is true, is a kind and gentle mother, watching over us with affectionate solicitude, and ever administering to our necessities. Patiently, and with long sufferance, she submits to the sins of ourselves and of those who practice upon us, and industriously endeavors to repair the injuries inflicted through wilfulness, ignorance, and false hypothesis. Were it not so, she would never assume the task of elaborating, for one per-

son, in the course of eight or ten months, the quantity of fourteen quarts, *extra*, of blood.

"After all the symptoms which call for bloodletting have disappeared," and the mania continues, cupping or leeching is recommended by Dr. Rush. When we recollect the number and variety of the indications for bleeding which have been mentioned, it may well be feared that a patient would become anaemic before the disappearance of all of them, and the leeches find but a small fountain of their favorite fluid.

Some of the other advocates for frequent bleeding demand a moment's notice.

The practice formerly pursued at Bethlem, as revealed by Crowther, Haslam and Monro, §§ 119, 120, 121, is so palpably and utterly absurd as to require no comment. It is difficult to conceive how it were possible, at so recent a period as 1815, that men of professional eminence in London should still uphold so gross an error. It is a remarkable example of the adherence to traditional customs, regardless of the question of their propriety.

Dr. Mayo, § 122, in his advocacy of depleting measures may rank, perhaps, next to Dr. Rush. But he who justifies bloodletting, although it produce a temporary excitement "amounting to a paroxysm," he who would bleed purposely to produce headache, in order to complete a "set of symptoms usually co-existent;" he who thinks that although bleeding may suppress the catamenia, yet that effect is "not worthy to be weighed against the general importance of bleeding," can not be open to conviction, either by argument or practical demon-

stration. His opinion, however, can have but little weight with others.

The reasoning of Mr. Farr, § 125, appears to betray more attachment to a system than a willingness to learn from experience. Although he has seen only "a few cases of acute mania," and, having "generally bled them," has not observed any "permanent benefit," and notwithstanding, by so doing, he acknowledges that he would "be acting under considerable uncertainty, where the life and reason of men are at stake," yet, nevertheless, he would "bleed patients again in the same circumstances,—on the principles of analogy." He does not inform us of the particular analogies which are thus esteemed as safer guides than practical, special knowledge.

Of the remaining authors who have been placed in this category, there is no one whose deductions can be questioned upon the ground of illogical inference from premises assumed. Among them are some of the most learned men who have graced the profession in the current century. They approve of frequent, but very far from invariable general bleeding, and base that practice, either upon a belief that inflammation is the *fons et origo* of the disease, or upon the results of experience.

Yet most of them assert or imply that venesection is to be resorted to with caution and discrimination. Prichard, § 123, has seen "mischievous results from it," and recommends it only "under due limitations." Burdett Steward, § 124, says that "large abstractions of blood are injurious, unless justified by the inflammation of an organ." Dr. Combe, § 126, acknowledges that we must not be governed by the condition of the pulse, nor by the mental excitement, as this may be caused by debility, and that he prefers local to general bleeding.

Fodéré, § 127, acknowledges that bleeding has been practiced with great detriment; that there are several conditions in which it can be resorted to only with danger; that mere "aberration of forces" is mistaken for augmentation of them, and that excitement may originate from debility. Even Broussais, § 128, affirms that copious bleeding, in acute mania, is not without danger, and that he has often seen patients whose disease was caused by the abuse of alcoholic liquors, die in a few hours after being bled. Foville, § 129, does not depend upon this means as a restorative, although, "in many cases," he "has seen the symptoms disappear as by enchantment" after its application. Georget, § 130, says that bleeding has been abused, gives rules for avoiding its "inconveniences," and often prefers local to general depletion. Deboutteville and Parchappe, § 132, would bleed "according to the constitution and strength of the patients," which, rightly interpreted, and in connection with a just appreciation of the symptoms, is sound doctrine. Rodrigues, § 133, testifies to the abuse of bleeding, and to its injurious effects in some forms of the disease. Spurzheim, § 134, in the second of the three classes into which, according to constitutional or acquired conditions, he divides the insane, remarks that bleeding is seldom necessary, and that if excessive, the disease is exasperated; and in the third class, he prohibits it altogether. It must be granted that this profound physiologist and minute observer has more accurately portrayed, according to my apprehension, the actual state of the insane in respect to the conditions forming the basis of the classification here alluded to, than any other author whose writings I have read. It is probable, however, that he would place in his first class—hypersthénics—many cases which persons having more experience than he in

the treatment of the disease, would transfer to the second or the third.

I now proceed to an analysis of the first series of authorities, from § 2 to § 115 inclusive. The force of the objections to bleeding, as well as the opinions in regard to the proper indications for it, can thus be more accurately estimated. The opinion that venesection has been too much practiced, is expressed by so many of the authors, that it is unnecessary to enumerate their respective sections.

Neither general nor local bleeding employed, §§ 10, 29, 37, 42, 43.

Neither mentioned ; hence inferred not to be used, §§ 35, 46, 70.

Both are injurious, § 53.

General bleeding not practised in mania, §§ 22, 25, 31, 32, 34, 41, 50.

Nor in any ordinary form of insanity, §§ 109, 110, 111.

Not mentioned ; inferred to be abandoned, §§ 28, 30, 33, 39, 45, 47, 56, 57, 58, 65.

It is not indicated in pure mania, §§ 76, 98, 103.

It is often injurious ; effects not specified, §§ 3, 4, 15, 21, 41, 66, 73, 99, 105, 108.

It increases excitement or aggravates the symptoms, §§ 6, 14, 17, 19, 27, 33, 74, 85, 88, 95, 98, 100, 107, 112.

Causes illusion, § 6 ; or epileptiform convulsions, § 115 ; increases irregularity of the circulation, § 100 ; impoverishes the blood, § 19 ; and converts melancholia to mania, §§ 96, 100.

It retards a cure, §§ 2, 11, 16, 18, 61, 72, 93, 98.

Renders the patient incurable, §§ 9, 16, 18, 29, 72, 91, 97, 98, 115.

Induces dementia, fatuity, idiocy, §§ 2, 3, 7, 11, 12, 18, 22, 44, 66, 74, 78, 79, 91, 93, 94, 95, 96, 97, 100, 101, 104, 107, 115.

Expend the vital force causing debility, prostration, exhaustion, §§ 6, 11, 19, 20, 27, 34, 44, 45, 61, 77, 106, 111.

And death, §§ 4, 9, 18, 22, 49, 67, 75, 78, 83.

It is "rarely necessary, generally dangerous," § 24 ; "scarcely admissible in any form of disease affecting the insane," § 60 ; "is always to be feared," § 52 ; "we can not be too guarded in the use of it," § 73.

Excitement, raving, &c., are not indications for bleeding, §§ 9, 17, 20, 66, 88, 102, 115.

They are no proof of inflammation, §§ 9, 80, 86, 87, 98, 99, 115.

Signs apparently indicating venesection, are often the *effect* of the excitement, not its *cause*, §§ 6, 17, 97, 107.

These signs, as well as the raving and violence, often arise from nervous excitement, irritability, or irritation, §§ 11, 16, 17, 21, 53, 115 ; or from asthenia or debility, §§ 18, 80, 82, 86, 91, 93, 99, 100, 102.

Mania originates in irritation, not inflammation, §§ 22, 29, 91, 100.

Insanity is a nervous disorder, §§ 16, 20, 49, 80, 97, 99.

A disease of debility, §§ 33, 42, 43, 56, 89.

Exhibiting excitement without vital power, §§ 73, 74, 75, 91.

It is not to be treated as inflammatory, § 15.

Inflammation is rare, § 100.

There "may be high excitement without even irritation, in a physical sense," § 80.

General bleeding is indicated in "very few cases," "scarcely ever," "rarely or never," "very seldom," "very rarely,"—conditions not specified, §§ 3, 24, 38, 42, 44, 48, 49, 63, 67, 80, 83.

"It may be," and "sometimes," "occasionally," or "rarely," is indicated,—conditions not mentioned, §§ 14, 15, 17, 54, 94, 100, 104, 113, 114.

It is indicated if there be phrenitis, or inflammation, §§ 9, 21, 40, 64, 73, 74, 86, 87, 100; in apoplexy and phrenitis, § 23; in entonic inflammation, § 6; in congestion or inflammation, §§ 88, 102, 112; in decided determination to the brain, § 59; in threatened apoplexy, § 66; in threatened apoplexy or paralysis, § 75; in real plethora or threatened apoplexy, § 76; in plethora and congestion, §§ 36, 81, 90, 96, 115; in the vigor of life, with plethora and other urgent symptoms, §§ 11, 55, 68, 79, 82, 91, 97; when the patient is vigorous and plethoric, with great vascular excitement or congestion, §§ 13, 51, 83; in general plethora accompanied with hemiplegia or epilepsy, or threatened apoplexy or paralysis, § 69; when there has been physical injury of the head, §§ 9, 80; when the mania is caused by insolation, or by alcoholic drinks, if there be no debility, § 78; when there is "organic disease requiring the reducing plan," § 4; if there be a local affection of the brain which may cause "plastic abnormalities," § 103; occasionally in high excitement, § 52; or excessive circulation, § 78; when there is heat and pain of the head, with habitual epistaxis, §§ 67, 91; in suppressed hemorrhages, menses or hemorrhoids, §§ 73, 91, 95, 96, 97, 107, 115; in inflammation, irrespective of the mental disorder, § 62; sometimes before a paroxysm, § 95. General bleeding should be resorted to only "to meet special symptoms," § 20.

Bleed the insane less than the sane, § 20 ; they do not bear it so well, § 69 ; bleed "cautiously," §§ 11, 40, 61, 79, 96 ; "sparingly," § 42 ; "moderately," § 83 ; "not largely," § 91 ; "with great caution, even in the plethoric," § 78. The pulse alone is not a safe guide §§ 11, 76, 83, 91, 107.

Bleeding from temporal artery preferred, §§ 52, 78, 82 ; temporal artery or jugular vein, § 88 ; by an incision in the scalp, §§ 89, 90.

Instances of excessive bleeding related, §§ 7, 12, 96, 101.

Local bleeding, by cupping or leeches, in mania, is indicated if there be inflammation, §§ 21, 40, 44, 48, 86, 100, 102, 112 ; in "doubtful" cases, § 16 ; in congestion, §§ 11, 14, 26, 27, 28, 31, 36, 41, 56, 56, 62, 111 ; in plethora and congestion, §§ 80, 81, 96, 97 ; if there be much cerebral excitement, § 9 ; determination to the brain, §§ 41, 69 ; in the early stages, § 38 ; in recurrent mania, § 38 ; if there be heat of the scalp, and pain, and the patient be subject so epistaxis or hemorrhoids, § 67 ; when the menses are suppressed, §§ 14, 36, 47, 67, 83 ; in suppressed habitual epistaxis, or hemorrhoids, § 67, 83 ; or periodical and habitual discharges of blood, §§ 95, 96, 97.

It is indicated "in most cases," § 24 ; "frequently," §§ 32, 77, 78, 89 ; "occasionally," §§ 15, 42, 50, 108 ; "sometimes," §§ 47, 54, 65, 111, 114 ; "seldom" "rarely," §§ 33, 110 ; "very rarely," § 24.

Indicated,—conditions not mentioned, §§ 6, 20, 25, 30, 39, 45, 51, 57, 58, 60, 66, 90, 99.

It is preferred to venesection, and is to be governed by the degree of vascular action, § 34.

"Patients frequently solicit it as a boon," § 77.

It should be employed cautiously, §§ 62, 72, 93.

Its good effects are only temporary, §§ 6, 22.

Dr. Conolly, § 24, says it is indicated "in most cases," but that general bleeding is "rarely admissible, and generally dangerous;" and although Dr. Burrows, § 76, denounces venesection in all cases of uncomplicated mania, yet he asserts that local bleeding was "indicated in every case of recent insanity" which he had seen.

In melancholia, general bleeding is sometimes indicated, § 71, three authorities: one of them, Mr. Fox, expresses the same opinion in § 66. Of the fifty-two physicians to English Asylums who were questioned by the Commissioners in Lunacy in regard to the treatment pursued by them, these are the only ones who mention venesection. Local bleeding is sometimes indicated in melancholia, §§ 22, 95, and eleven authorities (of the fifty-two questioned) in § 71.

The whole depressing system of treatment condemned, in insanity, generally, §§ 4, 5, 6, 8, 10, 15, 29, 70, 72, 84.

Tonics mentioned as often necessary, §§ 8, 64, 70, 77.

Stimulants often necessary, §§ 10, 14, 18, 35, 91, 93.

Both tonics and stimulants often necessary, §§ 34, 43, 45, 55, 66, 99.

Advantages derived by a change from the depressing to the strengthening system, § 72; and by a change from bleeding frequently, to bleeding rarely, § 76.

Dr. Burrows, § 76, and Dr. Feuchtersleben, § 103, think that general bleeding has been too much condemned, yet the former asserts that "it cannot be justified," and the latter that it "is never indicated," in pure mania.

The comparatively recent investigations, by analysis in regard to the pathological conditions of the blood, particularly those of Andral, Hittorf, and Erlenmeyer, have thrown some light upon the subject under discussion. It will be found that so far as the results of those labors have any bearing upon the treatment of insanity, their whole force, without a particle of abatement, is directed against the use of the lancet.

Hittorf, who analysed the blood of maniacs, arrived at certain conclusions, among which are the following:

"1st. In acute mania, the blood does not undergo so great a change in its proportions as to lead, *a priori*, to the assumption of the fact.

"2d. The blood exhibits a diminution in the relative quantity of the globules, and an increase in that of water.

"3d. Mania is not the cause of the alteration in the proportion of these elements of the blood, that alteration being dependent upon the constitution of the patient.

"4th. This form (mania) of insanity never exists conjointly with an acute phlegmasia."

The first deduction does not substantiate the assertion of Rush, that the blood is generally diseased beyond the conditions for the formation of the buffy coat. By the second, it appears that natural causes have produced the identical abnormal condition which is the result of copious bleeding. The blood has already too much serum and too few of the red globules. Shall we increase this disproportion artificially, or shall we rather endeavor to remove it? Erlenmeyer asserts that this form of serous crisis "occasionally becomes the cause of insanity." If it be the cause, much more, if the serous crisis be increased, will it become a source of aggravation to the disease.

In this connexion it is worthy of remark that Scipion

Pinel, § 98, whose treatise was written prior to the investigations of Hittorf and Erlenmeyer, intimates his belief that "the active element of irritation," in all sanguine congestions, is in the serum of the blood. The red globules and the fibrine are the most nutritive portion of this circulating fluid. If, therefore, Hittorf's second deduction and Erlenmeyer's assertion be true, we have one plausible explanation of the origin of insanity, even violent mania, in many debilitated and anaemic persons, (§§ 18, 33, 42, 43, 56, 80, 82, 86, 99, 102, &c.,) of the frequent increase of excitement and aggravation of the symptoms, (§§ 6, 14, 17, 19, 27, 33, 74, 85, 98, 100, 117, and others,) the perpetuation of the disease, or the conversion of it into dementia, (§§ 1, 3, 12, 44, 66, 79, 91, 101, 115, and many others,) and, finally, of the increased debility, the prostration, exhaustion and death which are so frequently attested to (§§ 4, 6, 9, 11, 18, 19, 20, 22, 27, 34, 44, 45, 49, 61, 67, 75, 77, 78, 83, 105, 111,) as the results of the abstraction of blood.

Again, the chemical analysis of both the blood and the several organic tissues have led the physiologists to the hypothesis that the red globules are especially devoted to the nourishment of the muscular and the cerebro-nervous system, and the fibrine to that of the fibro-cartilaginous. But bleeding diminishes the proportion of globules, leaving that of the fibrine unchanged. Hence, admitting the truth of the hypothesis, venesection abstracts from the system an especially undue amount of the particular aliment of the brain and nerves,—the substance which *alone* can preserve the equilibrium of action of the cerebro-spinal system, reproduce its substance, and thus compensate for the wear and tear which is augmented by the constant excitement and violence of mania. Here, then, we find a confirmation of the foregoing explanation of

the detrimental effects which have so often been the consequence of venesection, in diseases affecting the manifestations of the mind. Forty years ago, the buffy coat of abstracted blood was believed to be an infallible indication of inflammation. Now, it is known to be the production not only of a phlegmonous state, but also of its opposite,—debility or anaemia, as, for example, in chlorosis. Who can assert, that in the six cases mentioned by Haslam, and quoted by Rush, § 136, the buffy coat was not the production of a condition opposed to inflammation? Andral has demonstrated the fact that the generally essential condition for the formation of the buffy coat is a change in the relative proportion of the fibrine and the red globules. But bleeding changes that relative proportion by diminishing the quantity of globules relatively to the whole mass of blood, without diminishing that of fibrine. Hence, the more venesection is employed in a given case, the greater is the probability, other things being equal, of the appearance of the buffy coat.

The pathological effects of plethora and of anaemia, are in several respects identical, § 102. “Plethora, as well as anaemia,” says Romberg, the eminent professor at Berlin, “is followed by vertigo, optical and acoustic hyperaesthesia. Anaemia, especially in the female sex, is the most frequent basis of hyperaesthesia. It seems as if pain were the prayer of the nerve for healthy blood.”* So, most assuredly, in many cases, are the excitement and delirium of mania “the prayer” of the brain for a more bountiful supply—and sometimes more nutritious in quality—of the fluid upon which its vitality depends. How often have we seen a good substantial meal appease the turbulence of the maniac! How often we have known excitement allayed, and all the unfavor-

* A Manual of the Nervous Diseases of Man. London Edition. Vol. 1, p. 9.

able symptoms of mania quickly diminished, by the judicious exhibition of stimulants and tonics!

Most of the pathological consequences of the loss of blood mentioned in the following extract from the writings of Marshall Hall, are identical with those which may originate from excess of the sanguineous fluid. "Throbbing pain of some part of the head, a sense of pressure, as of an iron nail or of an iron hoop; intolerance of sound, of disturbance; sleeplessness; a state bordering on delirium; actual delirium, or even mania; some convulsive affection, perhaps epilepsy itself, are the affections which most frequently result from the loss of blood."* As, in insanity, one or more of these symptoms or conditions is almost always present, the necessity of a just appreciation of the *actual* state of the circulation, undeceived and unbiassed by factitious appearances, is evident. Otherwise, we may aggravate the condition which we intend to remove.

There is asthenic congestion and an asthenic congestion, an inflammation from augmentation of the vital power, and an inflammation from its diminution, exalted or perverted action from plethora, and exalted or perverted action from anaemia, a general excitement produced by abnormally increased nervous force, and a general excitement the result of abnormally depressed nervous force. All these pathological conditions may be *active*, or, on the contrary, they may be *passive*. This truth can never be safely forgotten or overlooked by any physician,—but especially by the physician of the insane. If, heretofore, there have been great errors in the treatment of insanity, and for a solution of this question it is only necessary to refer to the foregoing pages, those errors have frequently arisen from a mistaken notion of the real pathological con-

* Diseases and Derangements of the Nervous System. p. 353.

dition in which it often has its origin. It has too generally been believed to be a disease essentially sthenic in its character, whereas, at least in latter years, it is, in a very large proportion of cases, asthenic. The symptoms or effects of mania are salient, glaring, startling. The perturbation, the excitement, the raving, the violence of gesticulatory and other muscular action, all, in themselves, the offspring of power, and of power alone,—at least of so much as is necessary to their production,—convey to the beholder the impression that the vital force is too abundant, that there is a redundancy of it in the system, a too copious elimination of it by its primary source, and that, too, depending upon *a permanent ability to continue that copious elimination*. Never, in many instances, were appearances more deceptive. That power is often as the extremities of the branchlets of the tree—the product of the current year. The wealth of sap which produced them is wasted, and, tracing its channels downward, we find the root which furnished it dry, its powers exhausted and gone, or about to go, to rest. “We know,” says a recent reviewer, supposed to be Dr. Forbes Winslow, one of the highest authorities of the present day in all matters relating to psychiatry, “that, in *the great majority of instances*, insanity is an asthenic malady, requiring tonic treatment.”* Similar views are entertained by many of the authors heretofore quoted, and among them, the writers of §§ 18, 33, 42, 43, 56, 89. Others, as Winslow, § 73, Seymour, § 74, and Guislain, § 99, describe the disease as often exhibiting excitement without radical vital power; and Burrows, § 77, brings a powerful argument to the support of these views, when he alleges the fact that “*sudden prostration*

*Journal of Psychological Medicine and Mental Pathology. July, 1851. p. 347.

most unaccountably often follows (venesection) where the symptoms seem to justify bleeding." And he would require much more violent symptoms than some other physicians, for the justification of a resort to the lancet.

Even under the existence of anaemia, particularly if that condition be not extreme, the plethoric phenomena of flushing of the face, redness of the conjunctivae, turgescence of the blood vessels of the head, violent throbbing of the carotids, and perhaps fullness of the radial pulse may be produced, either by physical excitement, or by irregular and unequal distribution of blood.

What shall be said of the fourth deduction of Hittorf—that mania never exists in conjunction with an acute phlegmasia?

Much of the preceding discussion is not irrelevant to this question, but its importance demands a more special notice. Drs. Sutherland, § 22, and Kirkman, § 29, remark that they believe the pathological condition of the brain observed after death, to be the effects, not of inflammation, but of irritation. Feuchtersleben, § 103, asserts that in uncomplicated mania venesection is never indicated; Dr. Burrows, § 76, that it cannot be justified, and Drs. Sutherland, Corsellis, § 25, Thurnam, § 41, and several others, that they never practise it. Guislain, § 99, says that general bleeding is indicated when there is "a full, tense, frequent pulse, beating of the carotids, injection of the conjunctivae, general swelling of the face, heat of the scalp and oppression of the thorax." Yet so rarely does he find this combination of symptoms, that, with an average resident population of five hundred patients, he does not resort to the lancet once in five years. To this weight of authority may be added that of numerous physicians quoted in the sections pointed out in the index, asserting that insanity is a disease of nervous irritability,

of irritation, debility, &c., and not of inflammation. Even Crowther, § 119, the wholesale dealer in the lancet, enveloped as he was in the fog of traditional practice, learned that phrenitis is not the general cause of mania. "The best argument," says Dr. Henry Monro, "that inflammation of the brain is no essential condition of insanity is, that extravagant insanity so often exists without the least trace of it. Inflammation, if it exists, is not of a very active nature, and will not bear antiphlogistic treatment."*

It is remarkable that the condition of the pupil is not more frequently alluded to by authors, in their endeavors to ascertain the essential lesion from which insanity originates. In many cases of the most furious mania, and that, too, not unfrequently in robust, or plethoric persons, the pupil remains of its natural size. Sometimes it is even dilated. The cases in which it is generally most contracted are those of slender, nervous, perhaps debilitated persons, in whom there are various evidences of high excitability, and who not only tolerate but require a tonic, sometimes a stimulant treatment.

Some physicians have generally, in cases of violent mania, almost immediately resorted to opium or its preparations, nor halted in the increase of the dose until the violence was subdued. We have no evidence that their treatment was less successful than that of others. These facts strongly corroborate the idea that there is generally no pathological lesion such as we are accustomed to associate in the mind with the word *inflammation*. The same is true of the plan pursued by Dr. Benedict, § 10, whose patients, although "in a perfect fury of excitement," generally demanded "nutritious diet and brandy punch."

* Remarks on Insanity, its Nature and Treatment. London.

But no other physician with whose writings I am familiar, has arrived at what may properly be termed the ultra point asserted by the aforesaid analyzer of the blood of maniacs. Like sometimes begets like; but one extreme is very much inclined to produce its opposite. At such extremes are Rush and Hittorf. The latter must, of course, exclude acute phrenitis from the scope of his deduction. This done, he is unquestionably much nearer the truth than he who supposes mania always to be based upon inflammation.

Fifty years ago, delirium tremens was not recognized as a distinct disease. Its subjects were classed among, and called maniacs. It was believed to be inflammatory, and therefore treated by vascular depletion. Mark the results. Prichard and Broussais testify to the suddenness of prostration and death which often followed the practice. Even Rush advises not to bleed so largely in cases originating in the use of spirituous liquors, as in others. The lancet has long since been almost wholly abandoned, the narcotic and stimulant treatment adopted, and delirium tremens ranks among the diseases of greatest curability. So with puerperal insanity. Gradually, more and more extensively it has been perceived to be a disease of a species of irritability, rather than of inflammation,—or, if an inflammation, one which will not often tolerate depletion. Bleeding, if I am not mistaken, is at length very generally abolished in its treatment. Has the profession still to learn the same great truth in regard to almost all the forms of insanity? The physicians of the hospitals for the insane have already learned it. Let me not be misunderstood. I believe that bleeding may be safely practised, that it is even required somewhat more frequently in insanity generally, than in the two specific forms just mentioned. As a

rule, however, the same principles of treatment, as well as the same doctrines of pathology, are applicable alike to the whole.

In 1827, during the transition from the old to the new ideas of the pathology and therapeutics of delirium tremens, Dr. Coates, of Philadelphia, published an excellent article in the North American Medical and Surgical Journal, in which he says, "*this disease is a delirium and not a mania.*" But what is violent, raving mania, if it be not a delirium? As Dr. Coates writes of the former, many of the authorities herein adduced believe of the latter, that "it consists in a heightened activity of the sensorium, and this appears to arise from the generation in that organ, of an unusual vital power."* As he affirms of delirium tremens, so we know that perhaps to an equal extent, mania is "under the control of opium." Dr. Benedict, § 10, asserts that the two diseases "resemble each other in many of their symptoms and post mortem appearances;" and Dr. Winslow, § 73, remarks of mania, that "the brain, pathologically considered, is in a condition resembling that of delirium tremens."

There is too much reason to believe that many cases of mere cerebral or cerebro-nervous irritation, accompanied by delirium, by what specific name soever that delirium may be called, are still mistaken for sthenic encephalitis of an acute and alarming character. This error of *dia* prognosis induces an error of treatment, and the result is detrimental, fatal. Such, perhaps, are some cases marked by a group of symptoms mentioned by Dr. Macdonald, § 14. These occur in insanity other than puerperal, and in men as well as women. Such, also, it is probable, are most of the cases of that comparatively

* This expression "unusual vital power," is apparently intended to be essentially the same as that of Dr. Winslow, § 73,—"*excitement without power.*" That is, the vital power is *active* but not *enduring*.

recently recognized form of disease, a compound as it were of mania, typhus, delirium tremens and hysteria, of which Dr. A. V. Williams reported some cases, several years since, in the "Journal of Insanity," and which was subsequently more fully described by Dr. Bell. This disease, even in the asylums, was formerly treated by depletives, but now—and as the only ground for hope—by stimulants. Both of these classes of cases may probably be arranged under the nosological term "Mania," without infringing upon the rule of Hittorf's deduction. But in the whole circle of psychic disorders, there is no point at which the knowledge and acumen of the physician are brought to more severe a test, than in the discrimination between some of these cases and those which arise from absolute acute inflammation of the brain. Finally, notwithstanding these numerous arguments in favor of the approximative truth of Hittorf's fourth deduction, I think that, *according to the generally prevalent idea of the comprehensiveness of the word "Mania,"* it is too sweeping in its application, and that it was derived from the analysis of the blood of too small a number of patients to be received as a truth demonstrated.

It is a somewhat prevalent opinion, that disease, in general, implicates the nervous system more seriously, perhaps at the present time than in former centuries—an idea which might be inferred *a priori*, from the higher state of civilization, and the consequently greater development of that system. It is almost universally believed that insanity is increasing in a greater ratio than the increase of population. Leupholdt* asserts that all forms of the neuroses have become more and more developed, particularly in the course of the last century. Feuchtersleben† advances the idea that in the seventeenth,

* Geschichte der Gesundheit und Krankheit, p. 136.

† Principles of Medical Psychology, p. 51.

and the first half of the eighteenth century, the mass of mankind enjoyed a state of such vigorous health, as, upon the invasion of disease, to require the antiphlogistic system of Sydenham, and that, from that period to the present time disease has gradually more and more deeply affected "the roots of life," until it has finally fixed itself in the nervous system. Dr. Smith, late of the Ohio State Lunatic Asylum, mentions, § 18, "the asthenic character of disease, now becoming so marked in the great Western valley." Hechenberger, of Vienna, asserts that a "predominant erethistic vital debility is the fundamental characteristic of the present generation," and Dr. Engelken, of Bremen, § 105, alludes to what he calls "the convulsive erethism so common in our times." I shall attempt no discussion upon the merits of these opinions, but the present very prevalent idea that insanity is a nervous, §§ 16, 20, 49, 80. 97, and not an inflammatory, vascular disease, §§ 22, 29, 91, 100, tends to corroborate them.

It is not impossible that during the period in which Dr. Rush was in active life, disease in all its forms, in this country, not only involved the nervous system less than at the present time, but more seriously implicated the circulation, and hence required a more heroic method of attack for its subjugation. It is certainly easier to believe that this was the fact, than to conceive that an acute and sagacious observer, a learned and profound medical philosopher should have formed and promulgated opinions in regard to the treatment of insanity, diametrically opposed to those of many of the most experienced physicians of the present day, and so extreme in their character that but few can now approach them, to any point of near proximity.

A fact, which would have been introduced in a more appropriate place, had it not escaped attention, may here be mentioned. Brierre de Boismont, a French physician of enlarged experience in the management of the insane, formerly advocated the treatment by bleeding of active mania, giving preference to venesection rather than cupping. He now treats that form of disease by prolonged tepid baths, with cold effusion to the head, and asserts that his success is greater than it was by any other method.

From all that precedes, it may fairly be inferred that mental derangement, what form soever it may assume, is not, of itself, an indication for bleeding; but that such indication may exist in the presence of some symptoms, or some condition of the body.

Many authors think that a state of suppressed menstruation, hemorrhoids, or of other periodical or habitual discharges, is one of those conditions. Now, it is well known by persons who have much experience in insanity, that in females there is no constant relationship between the pathological mental condition and the mensual exudation. Some women become insane, continue so for months, and recover, without any interruption of the regularity of their monthly periods. In some, the mental disorder *precedes*, while in others it *follows* the suppression of the menses. When these have been suppressed, either before or after the invasion of insanity, they may return without having any curative effect upon the mental disease. Some patients recover soon *after* the reappearance of them, others *before* their reappearance. When the menses continue regularly through the progress of insanity, in some cases there is an exacerbation of the physical and the psychic excitement at the periods, but

in others, and I believe it may be said the majority, no such exaltation occurs.

For these reasons, even if there were no others, I apprehend that suppression of the menses is not, of itself, an indication for the artificial reduction of the quantity of blood. It is not this incident alone, but the general corporeal condition upon which this incident may depend, that is to be our guide towards a proper therapeutic treatment. The probability is, that the insanity and the suppressed menstruation both originate from the same abnormal condition, not that either of them is either the cause or the effect of the other. Therefore, whether the patient be plethoric or anaemic, restore the system to its normal vigor and tone, and nature will call her subordinates to the execution of their neglected functions. The same principle will hold good in reference to the other discharges alluded to or mentioned.

In regard to apoplexy, paralysis, convulsions, &c., they are to be treated as if the mind retained its normal integrity, with the exception, perhaps, of the fact—or the assumption, provided it be not proved a fact—that the insane do not tolerate the loss of blood so well as the sane.

Among the divers arguments in favor of the abstraction of blood, there is no one which more strongly bears the impress of absurdity and of error,—because it is opposed to the knowledge acquired by all accurate, if not all *common* observation,—than the manifestation of “strong maternal feelings,” the outward expression of the affections, advanced by Dr. Mayo, § 122. It appears to me that a maxim more deleterious in its consequences, if adopted in practice, could hardly be conceived. In whom are the emotions, judging of them by their expression, the strongest? Is it in the sanguine, the robust, the

plethoric, those of strong constitution; or rather in the nervous, the gentle, the delicate, the fragile, those who have neither a superabundance of blood, nor a constitution remarkably vigorous? Let daily observation answer. Shall the accoucheur meet with the lancet that remarkable emotional sensibility which so often accompanies the exhaustion of labor, and immediately succeeds delivery? Not if he be a good physiologist or psychologist, or a safe practitioner. No less should he abstain from the withdrawal of blood, under similar circumstances, in insanity. Guislain has had far greater experience than Mayo, and he informs us, § 99, that "the moral excitability of patients becomes more intense after they have been bled." It may be added that I once saw a remarkable exemplification of the truth of this, in an insane man, upon whom venesection had been practiced.

Before closing I may be allowed a few words in regard to my own experience.

My first impressions in regard to the disease, were such as to induce a pretty frequent resort to topical bleeding, and occasionally to venesection. My practice became, however, essentially modified, as my knowledge of the disease increased. An accurate idea of it may be obtained from the following synopsis.

In the course of the four years from 1845 to 1848, both inclusive, the cases of most recently developed insanity, and of the first attack, received into the Bloomingdale Asylum, were as follows :

19 cases in which the disease had existed from 1 to 7 days.			
11	"	"	8 to 10 "
31	"	"	11 to 14 "
14	"	"	15 to 21 "
2	"	"	22 to 28 "

Of these *seventy-seven* patients, *eight* had been bled by venesection, and *seven* by cups and leeches, before admission. Of the *eight* bled from the veins, *four* recovered and *four* died. Of the *seven* bled locally, *five* recovered and *two* were discharged in different degrees of improvement.

At the asylum, venesection was not resorted to for either of the seventy-seven patients. *Seven* of them were cupped, and *all* recovered. In one of these cases the cupping was practised as a precautionary measure against a rapidly increasing plethora, in an advanced stage of convalescence. In another, the patient had been leeched before admission. In a third, the patient was a robust, athletic, plethoric young man, a farmer, whose disease was of very sudden invasion, and violent in form. He was bled from the arm three times in the first few days. After coming to the asylum he still appeared too plethoric. I ordered cupping on the nape of the neck. When but three ounces of blood were drawn, he fainted—a confirmation of the assertion of Dr. Burrows, that prostration follows sanguine depletion even when the symptoms appear to indicate it, as well as of the alleged fact that the insane cannot tolerate this treatment as well as the sane.

The result of all the cases was as follows: *recovered*, 52, including five discharged during convalescence, which regularly progressed to a cure: *improved* in various degrees, eight: *unimproved*, five: *died*, twelve. Of the patients not cured, four were removed after a residence of but four, ten, seventeen, and thirty-five days, respectively, and consequently did not receive a fair trial of curative means. Several of those who died were not removed from home until much prostrated. One died in but one day after admission, one in two days, two in three

days, and two in seven days. One of the remaining six died of ship fever. He was considered curable before attacked with that disease.

To illustrate the effect of experience upon my practice in regard to bleeding, even locally, the four years may be divided into two periods, and the results of treatment given.

In 1845 and 1846, admitted, 32; cupped, 6; cured, 21; equal to $66\frac{2}{3}$ per cent. In 1847 and 1848, admitted, 45; cupped, 1; cured, 31; equal to 68 per cent.

Thus, of thirty-two patients received in the first period, six were cupped, while of forty-five in the last period only one was cupped, and the per centage of cures was increased.

Besides these cases, there was a considerable number, also recent, of periodical or recurrent mania. It is not essential to give a detail of the practice in these. The general result would not be materially affected thereby. If modified at all, it would be in favor of abstinence from bloodletting in any way.

A reply to the proposition at the commencement may now be attempted. It is evident, however, from the very nature of the case, that no positive, definite answer, couched in terms as fixed as the figures representing numbers, can be given. It must be merely approximative. I shall endeavor to convey it in a series of facts, truths or inferences, which I hope are fairly deduced from the substance of the foregoing pages.

1. Insanity, in any form, is not, of itself, an indication for bloodletting.

2. On the contrary, its existence is, of itself, a contra-indication. Hence, the person who is insane should,

other things being equal, be bled less than one who is not insane.

3. The *usual* condition of the brain, in mania, is not that of active inflammation, but of a species of excitement, irritability, or irritation, perhaps more frequently resulting from or accompanied by anaemia, debility, or abnormal preponderance of the nervous over the circulatory functions, than in connexion with plethora and enduring vital power.

4. The excitement, both mental and physical, produced by this irritation, can, in most cases, be permanently subdued, and its radical source removed by other means, more readily than by bleeding.

5. Yet insanity may be coexistent with conditions,—such as positive plethora, a tendency to apoplexy or paralysis, and sometimes sthenic congestion or inflammation, which call for the abstraction of blood. Therefore,

6. Venesection in mental disorders should not be absolutely abandoned, although the cases requiring it are very rare.

7. As a general rule, *topical* is preferable to *general* bleeding.

8. In many cases where the indication for direct depletion is not urgent, but where bloodletting, particularly if local, might be practiced without injury, it is safer and better to treat by other means, equalizing the circulation and promoting the secretions and excretions.

9. The physical conditions requiring bloodletting more frequently exist in mania than in any other of the ordinary forms of mental alienation.

10. Insanity following parturition, other things being equal, is to be treated by bleeding less frequently than that which has its origin in other causes.

11. If the mental disorder be the direct result of injury

to the head, the treatment must be directed to the wound, or its physical effects, not specially to the psychic condition.

12. In many cases where insanity is accompanied by typhous symptoms, and in some where the aspect is that of acute phrenitis, active stimulants alone can save the patient, and direct depletion from the circulation is almost certainly fatal.

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